SPERGULARIA IN NORTH AND SOUTH AMERICA

RUTH P. ROSSBACH

(Continued from page 143)

17. S. FASCICULATA Philippi (PLATE 593, FIGS. 1a–1d and MAP 13). Perennial: *caudex* well developed, branched and knotted, bearing 2–∞ diffuse, often rebranching stems,[1] 10–30 cm. long; *internodes of stem below the inflorescence* 5–35 mm. long, 0.6–1.1 mm. in diameter, shortly glandular-pubescent, only the oldest internodes becoming nearly glabrous by shedding their pubescence: *leaves densely fascicled,* setaceous, glandular-pubescent, usually filiform, but occasionally fleshy, 6–30 mm., usually 10–20 mm. long, 0.2–1 mm., usually 0.2–0.6 mm. wide; *stipules broadly lanceolate, lacerate at the tip or usually for as much as one half their length,* 4.5–7 mm. long: *inflorescence a short, open cyme,* glandular-pubescent throughout; *the internodes* 6–30 mm., usually 9–15 mm. long, 0.2–0.6 mm. in diameter; *bracts* 1–6 mm. long, the upper minute, *sepals* linear-lanceolate, glandular-pubescent, 5–10 mm.,[2] usually 5–8 mm. long; *petals* white, ovate, 4–10 mm., usually 4–6 mm. long, equal to or as much as 1.5 mm. shorter than the calyx; *stamens* 10; *styles* 3, 1.5–2.5 mm. long, *united when young, separating to as much as 0.6 mm. from the apex as flower matures: mature capsules* 5–7 mm. long, equal to the calyx or overtopped by the calyx by as much as 2 mm., or occasionally exceeding the calyx by as much as 1 mm.:[3] *fruiting pedicels* not reflexed, filiform, 6–17 mm. long: *seeds dark reddish brown or nearly black, often silvery, nearly pyriform in outline, deeply sculptured in closely interwoven, vermiform pattern, covered with lighter brown glandular papillae, or not papillose,* 0.8–1 mm. long, *surrounded by a narrow, white or brownish, scarious wing with entire margin less than* 0.1 mm. wide, *or not winged.*—Anal. Mus. Nac. Chile, viii. (Cat. Prael. Pl. Itin. Tarapaca, F. Philippi Lect.) 6 (1891). *Tissa Stuebelii* Hieron. in Engl. Bot. Jahr. xxi. 308 (1895). *T. fasciculata* (Philippi) Reiche, Fl. Chile, i. 197 (1896). *S. Stuebelii* (Hieron.) I. M. Johnston in Contrib. Gray Herb. lxxxi. 90 (1928); Macbride, Field Mus. Pub. Bot. xiii—Fl. Peru, pt. ii. no. 2, 633 (1937). *S. media* sensu Macbride, l. c. 632 (1937),[4] non *Arenaria media* L. (1762). *S. laciniata* Baehni & Macbride ex Macbride, l. c. 631.—SOUTH AMERICA: in the mountains of Peru and adjacent Chile. PERU: DEPT. LIBERTAD: Prov. Huamachuco: roadway between Oyon and Hamade de Peñon, Distr. Cajatambo, *Raimondi* 2110, April, 1868 (B.). DEPT. ANCASH: Prov. Cajatambo: growing with

---

[1] Also stems of the last growing season may give rise to new stems at their nodes.

[2] *C. Troll* 3161 has some of the sepals 10 mm. long but a style 2.5 mm., united nearly to apex and 10 stamens.

[3] See *R. S. Williams* 2560 (K., N. Y.).

[4] Cites *Weberbauer* 2751 (?) Ocros, Ancash, which is immature. Macbride's description here seems to be a peculiar combination of the characters of true *S. media* and of the Weberbauer plant, which is *S. fasciculata* (see citations!). A comparison of the diagnostic characters of these two species will show their great dissimilarity.

Cactaceae and Bromeliaceae, 3000–3200 m. alt., Ocros, *Weberbauer* 2751, March 31, 1903 (B., immature). DEPT. LIMA: Prov. Lima: mountains near Choisica (Lima-Aroyo R. R.) 1700–1800 m. alt., *Weberbauer* 5334, April, 1910 (G., U. S., F. M., immature). DEPT. ICA: Bahia de la Independencia, Cerro Quemado, *Weberbauer* 7958, August 5, 1927 (F. M., photo in G., type collection of *Spergularia laciniata* Baehni & Macbride, type not seen). DEPT. AYACUCHO: Prov. Lucanos: between Sancos and Chaviña, *Raimondi* 10119, September, 1863 (B., sepals equal to the capsule). Dept. unknown: Lomas de Capac, Cerca de Chala, *Raimondi* 10179, November, 1863 (B., immature). DEPT. AREQUIPA: Prov. Camaná: Atiquipa, *Raimondi* 12989 (B., sepals equal to or slightly shorter than the capsule, leaves fleshy). Prov. Arequipa: 8400 ft. alt., Yura, *R. S. Williams* 2560, August 10, 1901 (U. S., N. Y., K., capsule exceeding the sepals); in quarries at the foot of Mt. Misti, Arequipa, *Stübel* 79, February 15, 1877 (B., photo in G., type of *Tissa Stuebelii* Hieron., capsule shorter than the calyx (6 mm.)); dry gravelly river bed, 2500–2600 m. alt., above Arequipa, *Pennell* 13156, April 7–16, 1925 (G., U. S., N. Y., F. M., seeds not papillose); on rocky slopes (2800–2900 m. alt.) above Arequipa, *Pennell* 13247, April 6–16, 1925 (G., U. S., N. Y., F. M., immature); 8000–9000 ft. alt., Arequipa District, *D. Stafford* 354, April, 1934 (K., immature), local name "Estrellita de Cerro"; ravines, Pampa on southern slopes of Mt. Chachani (3050 m. alt.), north of Arequipa, *Hinkley* 10, March, 1920 (G., U. S., F. M., immature); 7600 ft. alt. Arequipa, *G. H. H. Tate* (Ladew Exped.) 1197, June, 1926 (N. Y.). DEPT. TACNA: Prov. Tacna: Alto de Tacora, *Juan Isern* (Comision Cientifica de Pacifico) 2277, June 22, 1863 (F. M.). CHILE: PROV. TARAPACÁ: Dept. Tarapacá: 3500–3800 m. alt., Cord. Quebrada de Quipisca, Noasa, *Werderman* 1841, March, 1926 (B., immature, but stamens 10 and style 2.5 mm. long and almost entirely united); between Jaina and Chasmisa, *F. Philippi* (Santiago, TYPE, photo. in G., immature). Prov. unknown: Paychama (3800 m. alt.) *Troll* 3161, March 9, 1927 (B., immature but sepals sometimes 10 mm. long, style united nearly to the apex (2.5 mm. long) and the stamens 10).

This species varies a great deal in comparative length of sepals and capsule. It also varies from a long-noded, sprawling habit, with filiform leaves, to a shorter-noded, more erect habit, with fleshy leaves (*Raimondi* 12989 and 10179). One plant (*Pennell* 13156) has non-papillose seeds but it matches many papillose-seeded plants in habit and all important characters. Occurrence of both types of seeds is another example of a phenomenon common to many of the species of *Spergularia*.

Hieronymus, in his description of *Tissa Stuebelii*,[1] says *S. fascicu-*

---

[1] Hieron. in Engler, Bot. Jahr. xxi. 308 (1895).

lata Philippi differs from his species in having a covering of short, crowded, erect hairs and a shorter calyx, 5 mm. in length. The type of *T. Stuebelii* is itself covered with pubescence. Since Hieronymus did not have many collections to study, he could not have known that the sepals may vary greatly in length.

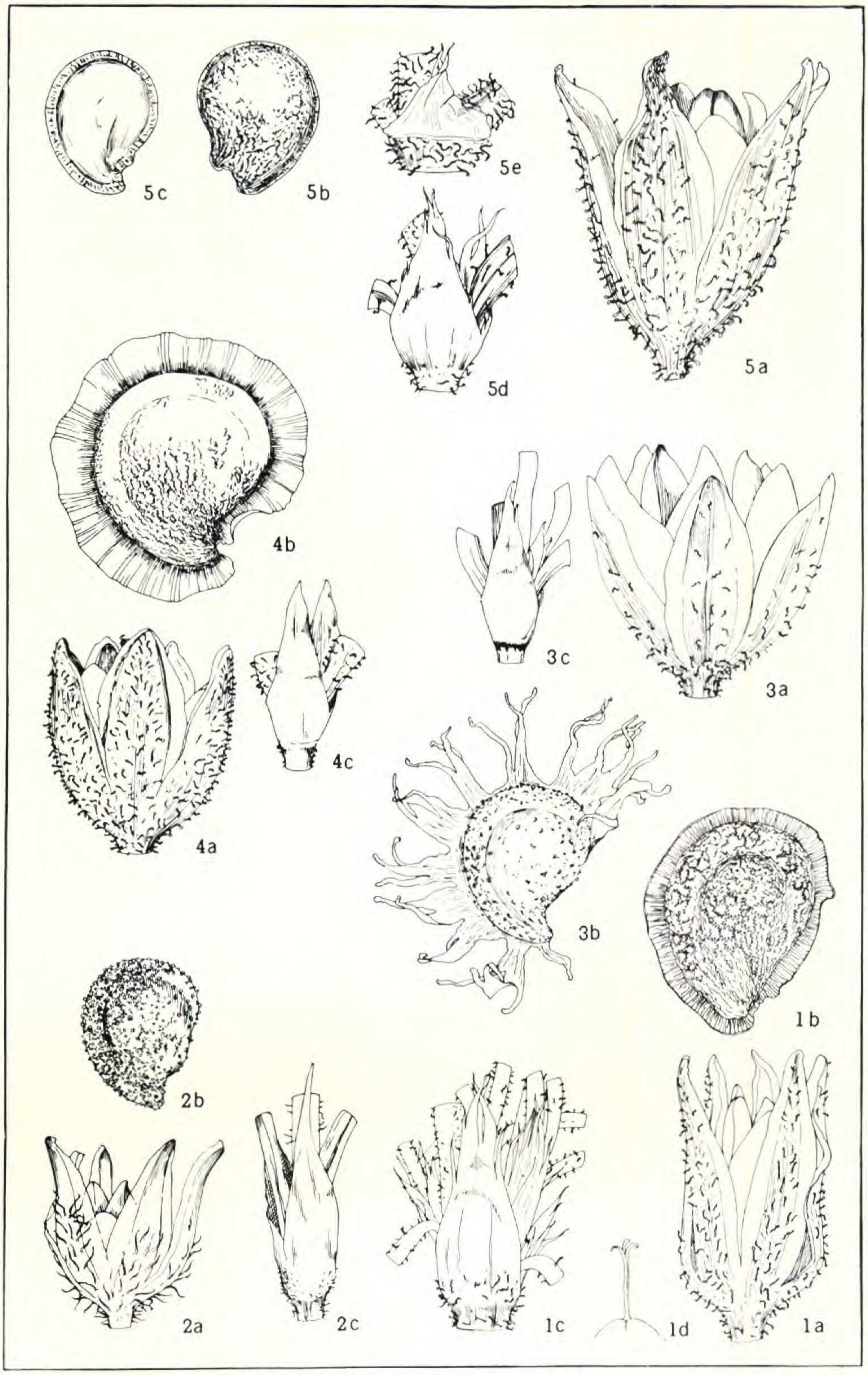
Macbride,[1] in his key to the Spergularias of Peru, says *S. laciniata* has the lowest internodes slightly shorter than the leaves, and stipules fimbriate to one half their length, as contrasted with *S. Stuebelii* which has the lowest internodes much exceeding the leaves and the stipules lacerate only above. The length of the internode as compared with that of the leaves is never a diagnostic character in the genus. In this species the stipules vary greatly in depth of laceration, with no supporting characters nor geographic range to separate the extremes.

It is unfortunate that all the Chilean specimens are immature, but the flowers all have 10 stamens and the same length and type of style as the Peruvian specimens. The habit, stipules, and leaves are similar.

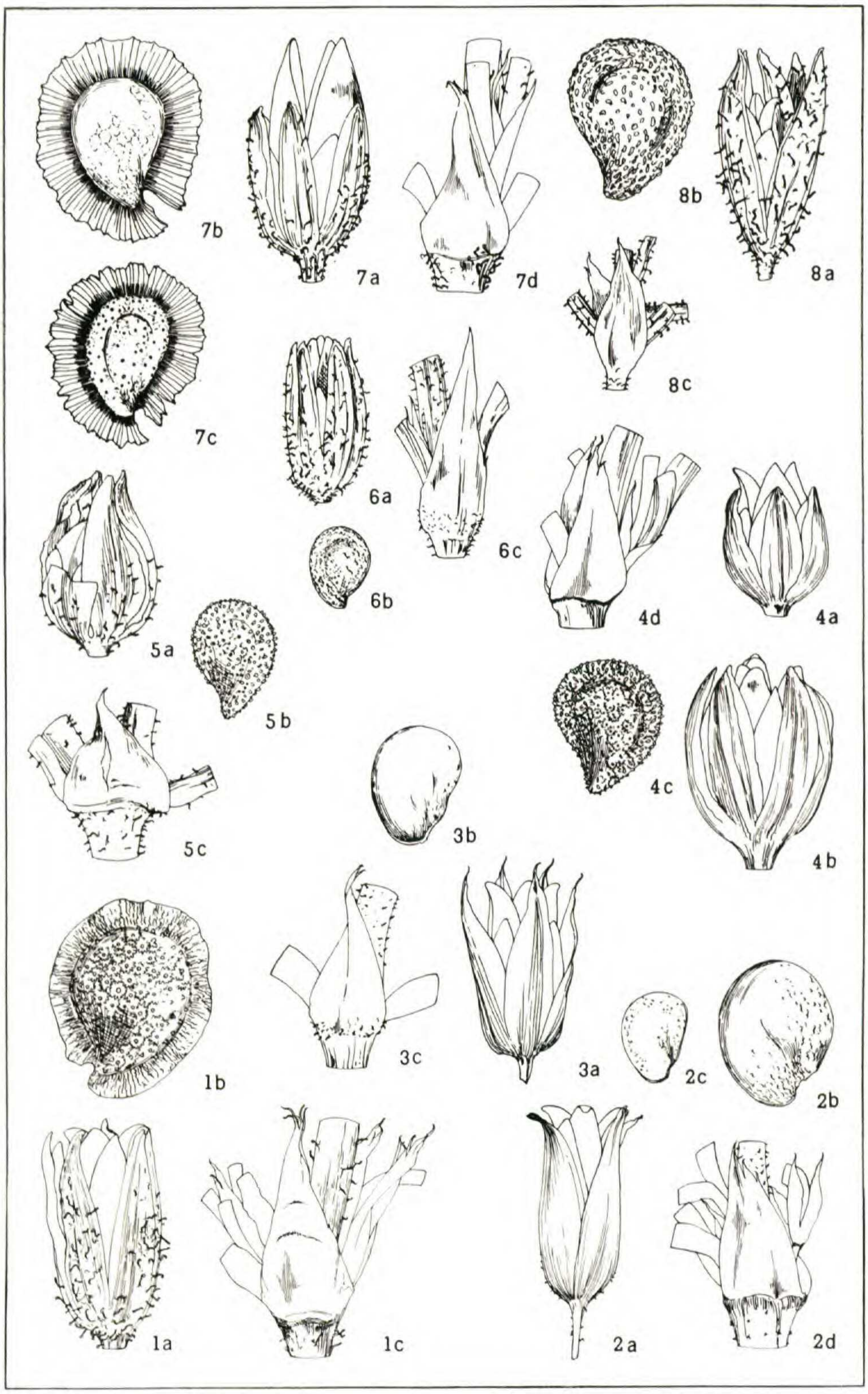
18. S. ANDINA Rohrb. (PLATE 593, FIGS. 2a–2c and MAP 14). Prostrate perennial: *caudex* bearing many crowded, slender stems, usually 10–20 or more, 2–8 cm. long; *internodes* of stem below the inflorescence 3–10 mm., usually 6–10 mm. long, less than 1 mm. in diameter: *leaves* not fascicled, mucronate, linear-filiform, glabrous, 7–15 mm. long, 0.4–0.8 mm. wide; *stipules* triangular-acuminate, 3–6 mm. long, connate from the base for 1–2 mm.: *inflorescence compact and leafy*, not sharply differentiated from the vegetative parts, *few-flowered*, the *internodes* shorter, 2–5 mm. long; *bracts* foliaceous, nearly as long as lower leaves: *sepals lanceolate, with heavy, spreading, glandular pubescence on the lower half and without curving tips, hooded at the summit*, 3.5–5 mm. long; *petals* broadly ovate, white or pink-tinged, 2–4 mm. long, 1–1.8 mm. shorter than the sepals; *stamens* 10; *styles* 3, always separated to the base: *mature capsules* 3–4 mm. long, exceeded by the calyx by as much as 0.5–1.2 mm.: *fruiting pedicels* very short, 0.5–2.5 mm. long: *seeds brown, rounded at the summit, covered with deep, close, vermiform sculpture and large, cup-shaped, brown, glandular papillae, giving the surface an incrusted appearance*, 0.6–0.8 mm. long, not winged.—Linnaea, xxxvii. 234 (1871–1873); Macbride, Field Mus. Pub. Bot. xiii—Fl. Peru, pt. ii. no. 2, 629 (1937).—SOUTH AMERICA: in the Andes of Peru and Bolivia of the region of Lake Titicaca, 3850–4100 m. alt. PERU: DEPT. PUNO: Azangaro, *Lechler* 1772, June, 1854 (K. TYPE; B.); *Weberbauer*, 456 February 28, 1902 (B.). BOLIVIA: DEPT. LA PAZ: Achacache, Prov. Omasuyos, reg. alp., 3950 m.,

---

[1] Macbride, Field Mus. Pub. Bot. xiii—Fl. Peru, pt. ii. no. 2, 631 (1937).



SPERGULARIA: stipule, calyx, capsule and style × 5; seeds × 25.
S. FASCICULATA, figs. 1a–1d. S. ANDINA, figs. 2a–2c. S. DEPAUPERATA, figs. 3a–3c. S. PISSISI, figs. 4a–4c. S. CREMNOPHILA, figs. 5a–5e.



SPERGULARIA: stipule, calyx and capsule × 5; seeds × 25.

S. ABERRANS, figs. 1a–1c. S. STENOCARPA, figs. 2a–2d. S. DENTICULATA, figs. 3a–3c. S. CERVIANA, figs. 4a–4d. S. FLORIBUNDA, figs. 5a–5c. S. PYCNANTHA, figs. 6a–6c. S. VILLOSA, figs. 7a–7d. S. CONFERTIFLORA, figs. 8a–8c.

Mandon 947 (Geneva; photo. and fragm. F. M.); La Paz, *Buchtien* 594, March, 1910 (N. Y., U. S., Leiden) and 594, February 20, 1907 (U. S.).

Rohrbach with his description of this species cites three different collections, *d'Orbigny* 1499, *Mandon* 947, and *Lechler* 1772, from which I choose *Lechler* 1772 as the type. The *d'Orbigny* specimen, which I have not seen, came from Potosi and, if correctly identified, would extend the range much farther south.

19. S. DEPAUPERATA (Gay) Rohrb. (PLATE 593, FIGS. 3a–3c and MAP 15). *Prostrate perennial forming cushions: caudex* bearing many persistent stems, branching repeatedly at each growing season, 5–16 cm. long: *internodes of stem below the inflorescence very short,* 1–7 mm. long: *leaves* fascicled or not, linear-filiform, strongly mucronate, glabrous or sparsely glandular-pubescent, 4–20 mm., usually 7–13 mm. long, about 0.5 mm. wide; *stipules* triangular-acuminate, 2.5–6.5 mm. long: *inflorescence* open, *few-flowered, sharply differentiated from lower parts with foliaceous bracts minute or wanting* and internodes glandular-pubescent, 6–14 mm., usually 8–12 mm. long: *sepals* ovate-lanceolate, often distinctly fleshy, densely glandular-pubescent, scarious-margined, 4–5.5 mm. long; *petals* white, ovate, 4–6 mm. long, equal to or exceeding calyx by as much as 1 mm.; *stamens* 6–10; *styles* 3, 0.6–1.4 mm. long, united or divided partially or completely to the base: *mature capsules* 4.8–5.5 mm. long, equal to or slightly exceeding the calyx by as much as 0.5 mm.: *fruiting pedicels* filiform, usually glandular-pubescent, reflexed or not, the lower 6–15 mm. long: *seeds light brown, rounded in outline, surface lightly roughened or pebbled in casual vermiform pattern, covered with regularly spaced, glandular hairs branched at the tips,* 0.8–1 mm. long, *surrounded by strap-like appendages,* 0.3–0.6 mm. wide, *made by deep lacerations of a papery wing.*—Linnaea, xxxvii. 231 (1871–1873). *Arenaria depauperata* Gay, Fl. Chile, i. 270 (1845). *Lepigonum depauperatum* (Gay) Kindberg, Synop. Lepig. 11 (1856) and Mon. Lepig. 25 (1863). *L. grandiflorum* Kindberg, l. c. 34, t. 3, fig. 22 (1863). *S. grandiflora* (Kindb.) Rohrb. in Linnaea, xxxvii. 235 (1871–73). *S. depauperata* Philippi in Anal. Univ. Chile, lxxxi. (Pl. Nuevas Chil.) 765 (1892), in *obs.*, new combination based on *Arenaria depauperata* but with no reference to literature. *S. tenella* Philippi, l. c. 766 (1892). *S. Rengifoi* Philippi, l. c. 769 (1892). *Tissa depauperata* (Gay) Reiche, Fl. Chile i. 200 (1896). *T. depauperata* var. *tenella* (Philippi) Reiche, l. c. *S. depauperata* var. *tenella* (Philippi) Hauman & Irigoyen in Anal. Mus. Nac. Hist. Nat. Buenos Aires, xxxii. 191 (1923), nom. in synonymy.—SOUTH AMERICA: in the Andes of central Chile and adjacent Argentina in the vicinity of the international boundary from the province of Aconcagua, Chile, south to the province of Rio Negro, Argentina. CHILE: PROV. ACONCAGUA: Uspallata Pass der Chilenischen Hochcordillere, Juncal, in Felsspalten, *Buchtien* 1132, February 13, 1903 (G., U. S., B.). PROV. SANTIAGO: in monte S. Pedro Nolasco,

32 m. s. m., *Carlos Rengifo* (Santiago, photo., fragment and seed in G., type of *Spergularia Rengifoi* Philippi). PROV. NUBLE: near Ternias, Chillan, *F. Deltor* 2066, February 15, 1931 (G.); Cordilleren von Chillan, *Felsen* 142, April 19, 1925 (B.); rupium fissuris Pico de Pilque, Andes de Antuco, *Pöppig*, 1828[1] (B., Geneva (photo in F. M.), F. M.; one of the Berlin sheets is marked *Lepigonum grandiflorum* (Poepp.) by Kindberg); without locality, Gay (G., type collection, type in Paris[2]). PROV. CAUTIN: Cerro Castillo, valle Malaco, Anden Valdivia, *Neger*, April, 1897 (B.). Chile, without locality or date: *Bridges* (B.); *Poeppig* (Leiden). ARGENTINA: PROV. RIO NEGRO: crevices of rocks, alt. 770 m., cushion-forming, Gobernacion Rio Negro, bridge over Rio Niri Huau, near San Carlos de Bariloche, *James West* 4770, December 15, 1935 (G., U. C.). PROV. NEUQUEN: growing in the driest rocks, 4500 ft., Liu Cullin, Gob. de Neuquen, *H. F. Comber* 304, December 12, 1925 (K.).

It is difficult to say who is the real author of the name *depauperata*. The label of the type collection in Gray Herbarium has *Arenaria depauperata* Naud. and Kindberg and Reiche both attribute it to Naudin. However, Gay must be considered the author since there is no author cited at the end of the "Cariofilieas" in Gay, Flora Chile, as there is after the "Elatineas," the next family treated.

The name *Lepigonum grandiflorum*, used by Kindberg in 1863 (see Mon. Lepig.) for the *Pöppig* collection, has its source in manuscript and herbarium names of Pöppig and Fenzl.[3] Since the *Pöppig* plants have no mature fruit, Kindberg, using the capsules and seeds as his fundamental key-characters, did not notice the almost exact similarity of *L. grandiflorum* and *L. depauperatum*, which was based upon the *Gay* collection, also immature, and kept up both species. In 1871–73, Rohrbach also kept both species but did not have the Gay collection and expressed his ignorance of *S. depauperata*.

The type specimens of both *S. tenella* and *S. Rengifoi* of Philippi are almost exact matches for the Gay collection.

20. S. PISSISI (Philippi) I. M. Johnston (PLATE 593, FIGS. 4a–4c and MAP 16). *Perennial, forming large mats*, 7–13 cm. high; new stems branching from nodes of the old; *internodes of stem below the inflorescence very short*, glabrous or covered with very short glandular pubes-

---

[1] Poeppig was in the region of Antuco, Chile, only from October, 1828, to March, 1829 (Poppig & Endl., Nov. Gen. & Sp. I. Prol. iii. 1835). Therefore "1830," given on the Geneva specimen can not be the date of collection. It presumably is the date of receipt.

[2] Kindb. Mon. Lepig. 26 (1863), says this collection is in Paris. I have not examined it but assume that it is the same as the Gray specimens.

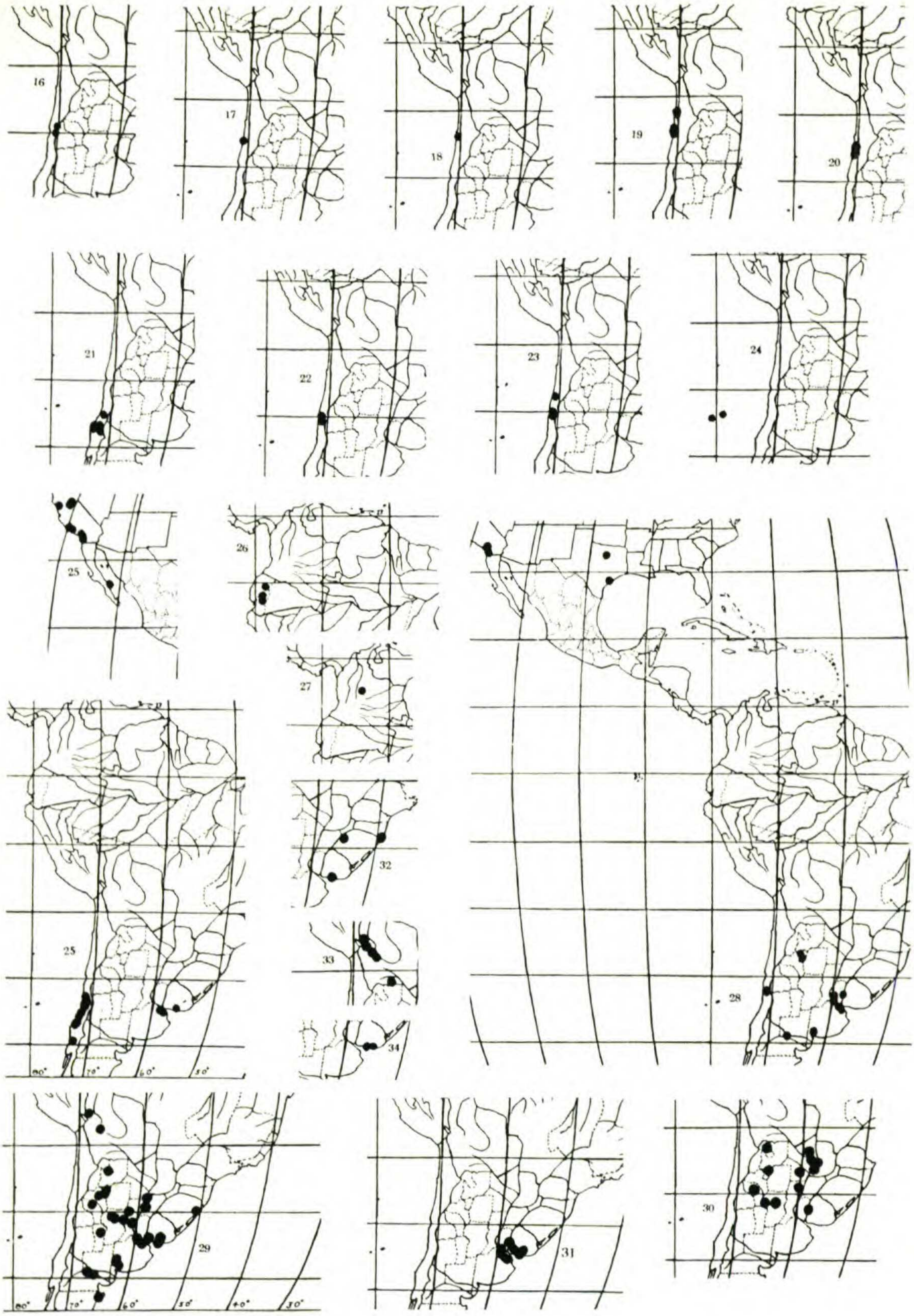
[3] Mus. Bot. Berol. has a specimen which was marked by Fenzl as *Spergularia grandiflora* Poepp. (1835), and by Kindberg as *Lepigonum grandiflorum*.

cence, *soft with a corky appearance*, 1.5–7 cm. long, 0.4–1.5 mm. in diameter: *leaves* fleshy, mucronate, fascicled, densely glandular-pubescent, 2–7 mm. long, 0.8–1 mm. broad; *stipules* narrowly lanceolate, not attenuate, not erose, white, silvery, 3–5.4 mm. long: *inflorescence only one- or two-flowered: sepals fleshy*, heavily glandular-pubescent, often purple-tinged at the margins, 4–5.4 mm. long; *petals* white, ovate, 3.6–4.5 mm. long, 0.4–1.4 mm. shorter than the calyx; *stamens* 10; *styles* 3, *united about two-thirds of their length*, 1–1.8 mm. long: *mature capsules* 5.4 mm. long, 0.4 mm. longer than the calyx: *fruiting pedicels* filiform, densely glandular-pubescent, 3–5 mm. long, probably reflexed when mature: *seeds dark brown with a silvery tinge, rounded in outline, delicately sculptured in closely interwoven, vermiform pattern, not papillose*,[1] 1 mm. long, *surrounded by a narrow, scarious, entire-margined wing*, 0.1 mm. wide.—Revist. Chil. Nat. xxxiii. 26 (1929). *Arenaria Pissisi* Philippi in Linnaea, xxxiii. 20 (1864). *Tissa Pissisi* (Philippi) Reiche, Fl. Chile, i. 200 (1896).—SOUTH AMERICA: in the Cordilleras of Chile only in the provinces of Atacama and Coquimbo at about 4000 m. alt. CHILE: PROV. ATACAMA: Dept. Vallenar: on gravelly, sod-covered bank of Laguna Chica, ca. lat. 28° 48′ S., long. 69° 51′ W. (about 3800 m. alt.), *Johnston* 5952, January 6–7, 1926 (G.); about small vegas below pass on west slope of Cerro Negro, in gravel, mats becoming over a meter broad, Quebrada Alfalfa (Q. de los Pozos), ca. lat. 28° 52′ S., long. 69° 49′–54′ W. (ca. 4000 m. alt.), *Johnston* 5985, January 7–8, 1926 (G., U. S.); Cordillera Laguna Chica (alt. ca. 4000 m.), *Werdermann* 255, January, 1924 (G., U. S., U. C.). PROV. COQUIMBO: Dept. Elqui: Baños del Toro, *Volkmann* 18$\frac{60}{61}$ (Santiago, TYPE, photo. in G.); Baños del Toro, *Reed* (K.); Baños del Toro *F. Philippi* 171 (Santiago, photo. in G., agrees with the Kew specimen); 3600 m. alt., Baños del Toro, Valle del Rio Toro, Cordillera de Elqui, *Espinosa*, February 26, 1938 (G., the only collection with mature seeds).

21. S. CREMNOPHILA I. M. Johnston (PLATE 593, FIGS. 5a–5e and MAP 17). Perennial: *root* very heavy, ligneous, as much as 1 cm. thick: *caudex* well developed, bearing many diffuse stems, 13–30 cm. long; *internodes below the inflorescence* heavily glandular-pubescent, 6–15 mm. long, 0.7–1.4 mm. in diameter: *leaves fleshy*, mucronate, glabrous or sparsely glandular-pubescent, fascicled or not, 6–18 mm. long, 1–3 mm. wide: *stipules* broadly lanceolate, variable in length as compared to width, erose at the apex, 1.6–5 mm. long: *inflorescence* a lax leafy cyme; *internodes* densely glandular-pubescent, the lowest 7–20 mm. long, 0.4–1 mm. in diameter; *bracts* foliaceous below, minute above, 1–11 mm. long, glabrous or glandular-pubescent: *sepals* ovate-lanceolate, densely glandular-pubescent, 5–8 mm. long; *petals* white, ovate, 4.4–6 mm. long, equal to the calyx or as much as 2 mm. shorter;

---

[1] This does not mean that the seeds may never be papillose. The description is based upon the single mature collection known, sent to me by Sr. Marcial R. Espinosa of the Museo Nacional of Santiago, Chile.



Ranges of, 16, Spergularia Pissisi; 17, S. cremnophila; 18, S. aberrans; 19, S. stenocarpa; 20, S. denticulata; 21, S. Cerviana; 22, S. floribunda; 23, S. pycnantha; 24, S. confertiflora; 25, S. villosa (in 2 sections but not showing Oregon station); 26, S. Spruceana; 27, S. colombiana; 28, S. platensis; 29, S. ramosa (three additional stations farther south, in Terr. Santa Cruz); 30, S. ramosa var. diffusa; 31, S. levis (an additional station farther south, in Terr. Santa Cruz); 32, S. grandis; 33, S. pazensis; 34, S. rupestris.

stamens 8–10; *styles* 3, separated to the base or united at most for one-half their length, 0.6–2 mm. long: *mature capsules* 5–6.6 mm. long, equal to the calyx or as much as 2.4 mm. shorter: *fruiting pedicels* filiform, densely glandular-pubescent, spreading but not reflexed, the lowest 8–22 mm. long: *seeds brown, with the surface either dull and sculptured in interwoven, vermiform pattern with occasional small papillae* (as in the type), 0.8–1 mm. long, *or lustrous and smooth with a suggestion of delicate, vermiform tracery,*[1] 0.7–1.2 mm. long, *surrounded by a hard, brown, narrow rim which is often sculptured in vermiform ridges.*—Contrib. Gray Herb. lxxxv. 41 (1929).—South America: grows in coastal Chile in the province of Antofagasta near the Atacama line. Chile: Prov. Antofagasta: Dept. Taltal: crevices at head of high fog-bathed sea-cliff near Aguada Cachina, waterhole in Quebrada Cachina, ca. 6 km. inland from Caleta Esmeralda, ca. lat. 25° 53′ S., *Johnston* 5683, December 15, 1925 (G. type, U. S., F. M., seeds dull, sculptured, papillose, 0.8–1 mm.); prostrate on exposed foggy slopes about summit of Cerro de la Cachina, near Aguada Cachina, *Johnston* 5684, December 15, 1925 (G., U. S., seeds glossy, 1–1.2 mm. long); decumbent on moist, fog-bathed, gravelly slopes at head of Quebrada, above the waterhole, near Aguada Grande ("Cachinal de la Costa" of Philippi), near Antofagasta-Atacama provincial boundary, ca. lat. 26° 2′ S., *Johnston* 5821, December 18, 1925 (G., U. S., F. M., seeds small, lustrous, 0.7–0.8 mm. long, stipules much shorter than in the previous two collections).

These three collections show great variability in type of seed (see citations), length of stipule, type of leaf, and length of sepal in comparison with petals and capsule. The seeds seem too widely different to belong to the same species but no other character can be found to support setting them apart. Glossy-seeded plants have both extremes of stipules and both extremes of leaves and all types of sepals.

Further collections are needed for more accurate understanding, either for support of this treatment or as evidence for some other.

22. S. aberrans I. M. Johnston (Plate 594, figs. 1a–1c and map 18). Perennial: *caudex* bearing many diffuse stems 20–40 cm. long; *internodes of stem below the inflorescence* glandular-pubescent, 10–35 cm. long, 0.6–1.2 mm. in diameter: *leaves* fascicled, mucronate, glabrous, 15–30 mm. long, 0.4–1 mm. wide; *stipules* broadly lance-acuminate, lacerate at the apex, 5–6 mm. long: *inflorescence* a short, open cyme, few-flowered, glandular-pubescent throughout; the *lowest internodes* 12–30 mm. long, 3–4 mm. in diameter; *bracts* 2–6 mm. long, glandular-pubescent: *sepals* linear, acute-tipped, glandular-pubescent, 4.8–5.6 mm. long; *petals* ovate, white, nearly equal to the

---

[1] This looks as though a seed like those of the type but without papillae had been heavily varnished, leaving only the slightest suggestion of what might have been deep sculpture!

calyx, 4.6–5.4 mm. long; *stamens* 5; *styles* 3, united when young, dividing to at least half their length as flower matures, 1–1.8 mm. long: *mature capsules* 4–5.4 mm. long, equal to or slightly exceeded by the calyx: *fruiting pedicels* not reflexed, filiform, 10–15 mm. long: *seeds dark, sepia-brown, rounded in outline, surface sculptured in interwoven, areolar, vermiform pattern, covered with dark brown papillae,* 0.8–0.9 mm. long, *surrounded by a narrow, dark brown wing, which is also sculptured in vermiform pattern next to the seed,* at most 0.1 mm. wide.—Contrib. Gray Herb. lxxxv. 147 (1929).—SOUTH AMERICA: only in the northern part of Chile in the province of Antofagasta. CHILE: PROV. ANTOFAGASTA: Dept. Antofagasta: in rock crevices, base of hills just southeast of La Chimba, Antofagasta, *Johnston* 3631, October 19, 1925 (G., TYPE); Antofagasta, *Jaffuel* 1136, October 29, 1930 (G.). Dept. Tocopilla: Tocopilla, *Jaffuel* 1007, October 27, 1930 (G.), probably, but no fruit or flowers.

S. aberrans was so named because of its "reduced androecium and united styles." This condition was considered by Dr. Johnston as atypical of the genus. However, five stamens are to be found in many species, such as *S. marina, S. canadensis, S. denticulata, S. stenocarpa, S. floribunda* and *S. platensis;* and united styles may occur in the following species: *S. fasciculata, S. Pissisi, S. cremnophila, S. stenocarpa, S. rupestris,* and *S. depauperata.*

23. S. STENOCARPA (Philippi) I. M. Johnston (PLATE 594, FIGS. 2a–2d and MAP 19). Annual or perennial: *caudex* bearing 3–∞ diffuse stems, 9–35 cm. long, usually many, which in turn may branch several times; *internodes of stem below the inflorescence* 8–40 mm., usually 20–30 mm. long, 0.5–1.2 mm. in diameter, nearly glabrous or usually covered with short glandular pubescence: *leaves* glabrous, *fascicled,* mucronate, 11–40 mm., usually 15–30 mm. long, 0.8–1.4 mm. wide; *stipules* broadly lanceolate, acuminate, slightly lacerate at the tip, 2.5–5 mm., usually 3–4 mm. long: *inflorescence an open, leafy, compound cyme; internodes* shortly glandular-pubescent, the *lowest* 8–30 mm., usually 13–25 mm. long, 0.3–0.8 mm. in diameter; *bracts* foliaceous below, minute above: *sepals linear-attenuate, the outer occasionally mucronate,* glabrous, 3–4.6 mm. long; *petals* white, ovate, 2.8–3.2 mm. long; *stamens* 5; *styles* 3, united when young, separating at least half their length or nearly to the base as flower matures, 0.8–1 mm. long: *mature capsules* 3.2–4.8 mm. long, *equal to or exceeding the calyx* by as much as 0.2–0.8 mm.: *fruiting pedicels* not reflexed, filiform, glandular-pubescent, the lowest 6–12 mm., usually 9–11 mm. long: *seeds brown, lustrous, smooth or slightly roughened with a suggestion of sculpture in vermiform pattern,* 0.4–0.7 mm. long, *not winged but sometimes with a very narrow, brown rim.*—Contrib. Gray Herb. lxxxv. 41 (1929). *Arenaria stenocarpa* Philippi, Fl. Atac. 10 (1860) and Viage Des. Atac. 19, 184 (1860). *S. Larrañagae* Philippi in Anal. Univ.

Chile, lxxxi. 767 (1892). *S. Borchersi* Philippi in Anal. Univ. Chile, lxxxi. 769 (1892). *Tissa Borchersi* (Philippi) Reiche, Fl. Chile, 199 (1896).—SOUTH AMERICA: known only on the coast of Chile in the province of Antofagasta. CHILE: PROV. ANTOFAGASTA: Dept. Tocopilla: Tocopilla, *Jaffuel* 1017, October 27, 1930 (G., seeds large but plant in poor condition); Cobija, *Gaudichaud*, July, 1836 (G., seeds large, only scraps of a plant). Dept. Taltal: prostrate on gravelly slope near Perales, vicinity of Paposo, Quebrada de Guanillo, *Johnston* 5604, December 8, 1925 (G., seeds large, spec. marked "the large plant has the calyx and flower-size of the type of *S. Larrañagae* Ph!" by Johnston); decumbent on rocky seaward slope between Quebrada San Ramon and Poso Malo, *Johnston* 5177, November 28, 1925 (G.); prostrate annual on gravelly bench just back of beach, petals white, Caleta de Hueso Parado, vicinity of Taltal, *Johnston* 5162, November 26, 1925 (G., U. S., outermost sepals mucronate but capsule and habit typical); Hueso Parado, *Philippi* (Santiago, TYPE, photo. and fragment in G.); Taltal, about 50 m. alt., *Werdermann* 799, October, 1925 (G., U. S., B., F. M., Cal. Acad., U. C., outermost sepals mucronate but habit typical); dry hillside about 8 km. south of town in Quebrada de Infieles, vicinity of Taltal, *Johnston* 5641, December 13, 1925 (G., U. S., plant small, more compact than any of the preceding); Quebrada de Taltal, *Montero* 2897, September 10, 1936 (G.); Puerto Oliva near Taltal, *Borchers* 2286, 1887 (Santiago, photo. and fragment in G., type of *Spergularia Borchersi* Philippi); Breas, *Larrañaga*, 1888 (Santiago, photo. and fragment in G., type of *Spergularia Larrañagae* Philippi, identification not absolutely positive).

There is a great seed variation, as will be noticed in the figure and citations. It is possible that, with many more collections, the larger-seeded plants might be found to have a more northerly range and enough constant characters to set them apart taxonomically. At present it seems best to include them all in *S. stenocarpa*.

The type of *Spergularia Larrañagae* Philippi is immature but, since its sepals are only very slightly mucronate, it is here included, although with more collecting plants like it may possibly be found to belong to *S. denticulata*. The fact that it was collected between the general ranges of the two species is significant. Its immaturity prevents any sure classification.

24. S. DENTICULATA Philippi (PLATE 594, FIGS. 3a–3c and MAP 20). Annual: *caudex* bearing 5–∞ diffuse, branching stems 4–17 cm. long: *internodes of stem below the inflorescence* few in number, covered with short, glandular pubescence, 5–24 mm., usually 10–20 mm. long, 0.4–1 mm. in diameter: *leaves* glabrous, mucronate, *usually not fascicled*, 8–20 mm. long, 0.8–1.4 mm. wide; *stipules* broadly lanceolate, 2.2–3.8 mm. long, only slightly lacerate at the tip: *inflorescence a crowded*

compound cyme; internodes covered with short, glandular pubescence, the lowest 5–18 mm. long, 0.3–0.9 mm. in diameter; *bracts* foliaceous, 3–12 mm. long: *sepals linear*, glabrous, *usually with attenuate, scarious or setaceous apices, sometimes blunt in the inner sepals*, 4–4.8 mm. long; *petals* white, ovate, 2.6–3.2 mm. long; *stamens* 5; *styles* 3, separated to the base, 0.6–0.8 mm. long: *mature capsules* 3–4 mm. long, *exceeded by the calyx* by as much as 0.4–1.6 mm., usually 0.8–1.2 mm.: *fruiting pedicels* not reflexed, sparsely glandular-pubescent, filiform, 2–9 mm. long: *seeds brown, dull with a smooth or slightly hubbled surface*, 0.5–0.6 mm. long, *not winged but often surrounded by a very narrow, brown rim.* —Anal. Univ. Chile, lxxxi. 769 (1892). *Arenaria denticulata* Philippi, Fl. Atac. 10 (1860). *Tissa denticulata* (Philippi) Reiche, Fl. Chile, i. 199 (1896).—SOUTH AMERICA: only on coast of Chile in the provinces of Antofagasta and Atacama. CHILE: PROV. ANTOFAGASTA: Dept. Taltal: one plant on dry rocky slope just north of summit of Porto Mina Carola, Sierra Esmeralda, along trail between Posado Hidalgos and Quebrada Cachina via Portezuelo de Mina Carola, *Johnston* 5672, December 14, 1925 (G.); common on gravelly or sandy soil, region about Aguado Cachina (waterhole in Quebrada Cachina ca. 6 km. inland from Caleta Esmeralda), *Johnston* 5737, December 14–15, 1925 (G., U. S., F. M.); dry sandy floor of quebrada about water-hole, vicinity of Aguada Grande ("Cachinal de la Costa" of Philippi), near Antofagasta-Atacama provincial boundary, *Johnston* 5822, December 16–18, 1925 (G.); Cachinal de la Costa, *Philippi*, December, 1853 (Santiago, TYPE, photo. and fragment in G.). PROV. ATACAMA: Dept. Chañaral: on dry sandy slope ca. 1.5 km. above the caleta, vicinity of Caleta Pan de Azucar, *Johnston* 5833, December 18, 1925 (G.); sandy plain near sea, prostrate herb with white flowers, not common, vicinity of Puerto de Chañaral, hills back of El Barquito, *Johnston* 4754, October 28–29, 1925 (G., U. S.).

This species is similar to *S. stenocarpa* in leaves and stipules and in the repeatedly branching stems. Both have compound cymes and five stamens. The seeds of both species are of the same size and shape and in both have narrow, brown rims. The two species, however, differ in many ways. *S. denticulata* has usually shorter stems with shorter internodes, a compact instead of a loose cyme, capsule shorter than calyx instead of equalling or longer than the calyx, and shorter styles divided completely to the base. *S. denticulata* always has dull seeds; *S. stenocarpa* always has lustrous ones. Although *S. denticulata* nearly always has strongly mucronate sepals, occasionally the inner are blunt at the apex. Likewise *S. stenocarpa*, although it usually has blunt sepals, occasionally has the outer mucronate. Many more collections of these two species are needed, and perhaps cytological work as well, in order to understand thoroughly the significance of those plants with both types of sepals.

25. S. CERVIANA (Cham. & Schlecht.) G. Don (PLATE 594, FIGS. 4a–4d and MAP 21). Perennial: stems at least 14–17 cm. tall;[1] *internodes of stem below the inflorescence* 5–23 cm. long, 0.7–1.2 mm. in diameter: *leaves* fascicled, shortly mucronate, filiform, glabrous or shortly and sparsely pubescent, 13–35 mm. long, 0.6–0.8 mm. broad; *stipules* broadly lanceolate-acuminate, 2–6 mm. long: *inflorescence* a compound cyme, glabrous throughout or only shortly and sparsely pubescent, *usually crowded because of the many capsules and short internodes; internodes* slender, the lowest 1–21 mm. long, 0.4–0.6 mm. in diameter; *bracts* foliaceous, lacking or as much as 15 mm. long: *sepals* linear, *blunt-tipped, glabrous,* 2.6–4.5 mm. long; *petals* white, ovate, 2–4 mm. long, equal to or as much as 0.5 mm. shorter than the sepals; *stamens* 10; *styles* 3, separated to the base, 0.6–0.8 mm. long: *mature capsules* 3.2–4.2 mm. long, equal to or as much as 0.4 mm. shorter than or 0.8 mm. longer than the calyx; *fruiting pedicels* filiform, *not reflexed, glabrous,* the lowest 4–12 mm. long, 0.2 mm. in diameter: *seeds* 0.6–0.8 *mm. long, dark brown, pyriform, silvery, deeply sculptured in closely interwoven, vermiform pattern, covered with large, light brown, glandular papillae, sometimes dark brown and more rigid on the flat sides of the seed,* not winged.—Gen. Hist. Dichl. Pl. i. 426 (1831). *Arenaria Cerviana* Cham. & Schlecht. in Linnaea, i. 52 (1826). *Spergula Cerviana* (Cham. & Schlecht.) D. Dietr. Syn. Pl. ii. 1598 (1840). *Lepigonum purpureum* var. *firmum* Kindb. Mon. Lepig. 33, t. 3, fig. 21 (1863). *Spergularia firma* (Kindb.) Rohrb. in Linnaea, xxxvii. 231 (1871–73). *Spergularia polyantha* Philippi in Anal. Univ. Chile, lxxxi. (Pl. Nuev. Chil.) 765 (1892).—SOUTH AMERICA: grows only in south-central Chile. CHILE: PROV. CURICO: Dept. ?: ca. 1500 m. Hacienda Monte Grande, *Werdermann* 1671, December, 1924 (B., seeds immature). PROV. NUBLE: Dept. Chillan: *Narcissus Briones,* 1887 (Santiago, photo. and fragment in G., type of *Arenaria polyantha* Philippi). Dept. Laja: in stony fields at Antuco, *Pöppig* 125, December (B., type of *Lepigonum purpureum* var. *firmum* Kindberg and marked by him in 1861); also *Pöppig* 804 (same collection, I think, Geneva, photo. in F. M.). PROV. CONCEPCION: Dept. Talcaguano: [Talcaguano, Feb. 13–Mar. 8, 1816],[2] *Chamisso* (B. TYPE, marked *Arenaria Cerviana* N.). Dept. Lautaro: Coronel, *A. W. Hill* 42, December, 1902 (K., seeds immature).

There is great variation in comparative lengths of capsule and calyx, as is shown in the illustration. However, there are too few collections known for an understanding of the significance of this variation. At present it seems best to include all these plants under one species, especially since all fruiting plants have similar seeds.

26. S. FLORIBUNDA (Gay) Rohrb. (PLATE 594, FIGS. 5a–5e and MAP 22). Perennial with a heavy ligneous root as much as 5 mm. thick:

---

[1] Most of the collections are rootless.

[2] Locality and date found in Linnaea, i. 10 (1826).

caudex well developed, nodose, bearing 8–∞ diffuse stems 3–13 cm. long: *internodes of stem below the inflorescence* glandular-pubescent, 2.5–20 mm. long, 0.3–0.8 mm. in diameter: *leaves* filiform, mucronate, glabrous or glandular-pubescent, usually not fascicled or if so with only 1 leaf in the axil, 4–20 mm. long, 0.4–0.8 mm. broad; *stipules* broadly lanceolate, acuminate, 2–3.8 mm. long; *inflorescence a crowded cyme; internodes* usually too crowded to measure or 1–5 mm. long; *bracts* foliaceous, minute, 2–5 mm. long: *sepals* linear, with broad, scarious margins, sparsely glandular-pubescent especially toward the base, 2.8–5 mm. long; *petals* white, ovate, 2.4–3.8 mm. long, as much as 1.2–2 mm. shorter than the calyx; *stamens* 3–5; *styles* 3, divided to the base, 0.7–1 mm. long: *mature capsules spherical,* 2.4–3.8 mm. long, equal to or as much as 0.4–1.2 mm. shorter than the calyx: *fruiting pedicels* filiform, glandular-pubescent, 1.2–2 mm. long: *seeds* 0.4–0.7 *mm. long, black, pyriform, the surface sculptured in vermiform, areolar pattern and densely covered with short, coarse (sometimes partially rigid) brownish or blackish, glandular papillae,* not winged.—Linnaea, xxxvii. 230 (1871–73). *Arenaria floribunda* Gay,[1] Fl. Chile, i. 269 (1845). *Lepigonum floribundum* (Gay) Kindb. Synop. Lepig. 5 (1856). *L. depauperatum *floribundum* (Gay) Kindb. Mon. Lepig. 26 (1863). *S. coquimbensis* Philippi in Anal. Univ. Chile, lxxxi. 763 (1893). *Tissa floribunda* (Gay) Reiche, Fl. Chile, i. 197 (1896).—South America: known only in coastal Chile in the province of Coquimbo. Chile: Prov. Coquimbo: Dept. La Serena: vicinity of La Serena, *Cl. Gay* (G., K., TYPE COLLECTION);[2] Punta de Teatinos, La Serena, *Werdermann* 1542, November, 1925 (B.), in part only; Cerro Penascudo, *Barros* 255, September 13, 1928 (G.). Dept. Coquimbo: vicinity of Coquimbo, *Jaffuel* 2671, September, 1931 (G.); Coquimbo, *Jaffuel* 1289, November 3, 1930 (G.); Coquimbo, *Reed* (K.); "El Faro," Coquimbo, *Montero* 2833, September 16, 1936 (G.); Coquimbo, *Philippi* 1951, September, 1885 (Santiago, photo. and fragment in G., type of *S. coquimbensis* Philippi). Dept. Ovalle: Steppe bei Cerillos west Ovalle, *Otto Berninger* 638, September 19, 1925 (B.).

S. floribunda is quickly recognized by its crowded cyme, spherical capsules and small, black, densely papillose seeds. The type of *S. coquimbensis* Philippi is an exact match for specimens of the type collection of *Arenaria floribunda* Gay.

27. S. **pycnantha**, spec. nov. (TAB. 594, FIG. 6a–6c). Perennis: caudice ramoso, caulibus 2–6 diffusis interdum divisis, 6–20 cm.

---

[1] Gay must here be considered the author, instead of Naudin as is usually thought, because, as previously stated, there is no author cited at the end of "Cariophylleas," as there is after the "Elatineas," and no later publication that I have been able to find states that Naudin did the work on the *Caryophyllaceae*. This is decided also in spite of the fact that Gay credited Naudin with the authorship on the labels of the type collections.

[2] Type not seen but is supposedly in the Muséum National d'Histoire Naturelle at Paris.

longis; internodiis caulis partis efloriferae dense villoso-glandulosis, 6–25 mm. longis, 0.4–1.4 mm. crassis: foliis glabris vel villoso-glandulosis, breviter mucronatis, fasciculatis, 7–30 mm. longis, 0.6–1.4 mm. latis: stipulis conspicuis, lanceolatis acuminatis, apice laceratis, 5–7 mm. longis: cyma composita, villoso-glandulosa, propter internodium longum infra flores infimos alte supra reliquas partes plantae producta; internodiis infimis 1–15 mm. longis, 0.2–0.6 mm. crassis; bracteis foliosis 1.2–10 mm. longis: sepalis linearibus, margine late scariosis, villoso-glandulosis, 3.6–4.6 mm. longis; petalis albis, ovatis, 2.4–3 mm. longis, sepalis 0.6–1.6 mm. brevioribus; staminibus 2–5; stylis 3, 0.6–0.8 mm. longis: capsulis maturis 3.2–4.2 mm. longis, sepalis aequantibus vel eis 0.8 mm. brevioribus: pedicellis fructiferis filiformibus, villoso-glandulosis, haud reflexis, 2–7 mm. longis: seminibus 0.3–0.5 mm. longis, ferrugineis, lineis vermiformibus intertextis sculptis, fere laevibus vel tumulis prominentibus productis areolis, aliquando papillis parvis ferrugineis, haud alatis.—SOUTH AMERICA: coastal Chile, only in the provinces of Atacama and Coquimbo. CHILE: PROV. ATACAMA: Dept. Copaipó: Bandurrias, *Giesse* (B.); Desert of Atacama, *Giesse* 132, 1885–87 (N. Y., one plant only on the sheet, identical with the Bandurrias specimen); Vallenar, *Barros* 263, September 9, 1927 (G., not mature). Dept. Freirina: Huasco, *Jaffuel* 1164, November 2, 1930 (G., TYPE). PROV. COQUIMBO: Dept. La Serena: La Serena, *Claude-Joseph* 4461, October, 1926 (U. S.). Dept. Coquimbo: Guayacan, *Philippi*, November, 1864 (B.); Coquimbo, *Montero* 1850, September 26, 1934 (G.); Coquimbo, *Rose* 19316, October 11, 1914 (U. S., only part of sheet). Dept. Ovalle: Ovalle, *Claude-Joseph* 5197 & 5198, October, 1927 (U. S.). Dept. ?: Agosto, *Jaffuel* 3927, 1937 (G.). MAP 23.

28. S. CONFERTIFLORA Steud. (PLATE 594, FIGS. 8a–8c and MAP 24). Perennial with heavy root as much as 4 mm. in diameter; *caudex* elongate, bearing one to several *prostrate*, much branched stems 10–25 cm. long; *internodes below the inflorescence* glabrous or glandular-pubescent, 2–20 mm. long, 0.5–1.6 mm. in diameter; *leaves filiform, densely fascicled*, or with a small branch in the axil, shortly mucronate or abruptly acute, glabrous or sparsely glandular-pubescent, 7–30 mm. long, 0.3–0.7 mm. wide; *stipules* lanceolate-acuminate, 3.2–6 mm. long: *inflorescence* a loose, many-flowered cyme; *internodes* filiform, glandular-pubescent, the lowest 2–16 mm. long, 0.2–0.5 mm. in diameter; *bracts* small, becoming minute above, glandular-pubescent, 1–7 mm. long: *sepals* linear, glandular-pubescent, 4.8–6.2 mm. long; *petals* white, ovate, 3–5.6 mm. long, as much as 1.2–2.6 mm. shorter than the calyx; *stamens* 7–10; *styles* 3, separated to the base, 0.4–0.6 mm. long: *mature capsules slender*, 4–6 mm. long, equal to or as much as 0.8 mm. shorter than the calyx: *fruiting pedicels* erect, filiform, glandular-pubescent, the lowest 3–7 mm. long: *seeds* 0.6–0.7 mm. long, *brown, rounded in outline, obscurely sculptured in interwoven, vermiform pattern, covered with papillae which may be round or elongate and slightly curved,*[1] not

---

[1] Some seeds may have both kinds of papillae, others have entirely elongate ones.

winged.—Flora, 425 (1856); Philippi in Anal. Univ. Chile, lxxxi. (Pl. Nuevas Chile) 768 (1892); Skottsberg, Nat. Hist. Juan Fernandez and Easter Is. ii. (Phan. Juan Fernandez) 121 (1922). *Arenaria rubra* sensu Hooker & Arnott in Hooker's Bot. Misc. iii. 147 (1832), in part, including Juan Fernandez (spec. *Bertero*), excluding Valparaiso (*Bridges*), which is *S. villosa*,[1] non L. (1753). *Arenaria rubra* var. *polyphylla* Philippi in Bot. Zeitung, xiv. 642 (1856) (at least in part because of an annotated *Philippi* collection (K.) from Juan Fernandez but probably not as to Rancagua plants[2]). *S. campestris* 2. forma multicaulis stricta, etc. Rohrb. in Linnaea, xxxvii. 230 (1871–1873). *S. polyphylla* (Philippi) Rohrb. l. c. 232 (1871–73). *S. confertiflora* var. *polyphylla* (Philippi) Skottsberg, Nat. Hist. Juan Fernandez and Easter Is. ii. (Phan. Juan Fernandez) 121 (1922). *Tissa polyphylla* (Philippi) Reiche, Fl. Chile i. 197 (1896). *S. rubra* sensu Johow, Estud. Fl. Juan Fernandez, 118 (1896), non *Arenaria rubra* L. (1753). —SOUTH AMERICA: only on the Juan Fernandez Islands. CHILE: Juan Fernandez Islands: on sea cliffs, *Bertero* 1431, March, 1830 (K., TYPE COLLECTION);[3] Juan Fernandez, *Philippi*, 1861 (K., marked *polyphylla* in same manner as other Philippi labels, type collection of *Arenaria rubra* var. *polyphylla* Philippi?); Juan Fernandez, *Moseley* (Challenger Exped.), November, 1875 (K.); Juan Fernandez, *Hooker f.* (N. Y.); Masatierra, Punta San Carlos, *C. & I. Skottsberg* 123, January 9, 1917 (N. Y., marked *Spergularia confertiflora* Steud. by Skottsberg); Masatierra, Bahia de Padre, *C. & I. Skottsberg* 296 (U. S.).

This species is apparently endemic in the Juan Fernandez Islands. Many more collections are needed thoroughly to understand its variations and to determine whether there is any foundation for the reports of its occurrence on the mainland of Chile.

29. S. VILLOSA (Pers.) Camb. (PLATE 594, FIGS. 7a–7d and MAP 25). *Perennial* with a heavy ligneous central root; *caudex* well developed, branched, bearing 2–many, usually many, diffuse stems 9–30 cm. long; *internodes of stem below the inflorescence* usually glandular-pubescent, sometimes glabrous below, but always pubescent above, 3–40 mm. long, 0.4–1.7 mm. wide: *leaves* fascicled, filiform, mucronate, 10–40 mm. long, 0.3–1.2 mm. broad, usually glandular-pubescent; *stipules* broadly lanceolate, acuminate, occasionally, when small, deltoid, 2–8 mm. long: *inflorescence* a lax, many-flowered cyme, always glandular-pubescent, the *lowest internodes* 5–35 mm. long, 0.2–0.8 mm. in diameter; *bracts* usually minute, 1–7 mm. long, occasionally foliaceous, 8–15 mm. long: *sepals* linear-lanceolate, glandular-pubescent, 2.8–5.2 mm. long; *petals* white, ovate, 2.6–5 mm. long, usually 0.6–1.6 mm. shorter than the calyx; *stamens* 7–10; *styles* 3, separated to the base,

---

[1] The remaining collections cited were not seen by the author.

[2] Rancagua is on the mainland of Chile, whence the author has seen no collections of this species.

[3] Is the type at Paris? Flora, 402 (1856) note!

0.4–0.6 mm. long: *mature capsules* 4–6.5 mm., usually 5–6 mm. long, and 0.3–1.8 mm., usually 0.8–1.8 mm. *longer than calyx: fruiting pedicels* filiform, always glandular-pubescent, usually reflexed, though sometimes erect, the lowest 5–18 mm. long: *seeds* 0.4–0.65 mm., usually 0.5–0.6 mm. long, *dark brown, almost black, pyriform, with small black papillae in regular pattern or smooth, occasionally with small raised places in the same pattern as the papillae, covered with very delicate, vermiform traceries in areolar pattern,* with or without a scarious, white, *erose wing* 0.1–0.2 mm. wide, often with a brown zone next to the seed.—In St. Hilaire, Fl. Bras. ii. 178 (1829); Arech. in Anal. Mus. Nac. Montevideo, iii. (Fl. Uruguay) i. 93 (1901) in part (including references to *Spergula villosa* Pers. and *Lepigonum trachyspermum* Kindb. and localities given, excluding the description and reference to *S. villosa* α. *genuina* Rohrb. in Mart. Fl. Bras. xiv. pt. ii. 268, t. lxi, fig. 1 (1872), which apply to *S. ramosa* and *S. rupestris, q. v.*); Buchtien, Contrib. Fl. Bolivia, pt. i. iii. (1910) (as to source of name but not as to plant cited, La Paz 448, which is *S. pazensis*); Macbride, Field Mus. Pub. Bot. xiii. (Fl. Peru) pt. ii. no. 2, 633 (1937) (as to source of name but not as to plants described, because of "seeds yellow," and excluding reference, Mart. Fl. Bras. xiv. pt. 2, pl. 61, both of which probably apply to *S. ramosa, q. v.*). *Spergula villosa* Pers. Synop. i. 522 (1805); Steud. Nom. Bot. ed. 2, ii. 617 (1841). *Arenaria media* sensu Hooker & Arnott in Hooker, Bot. Misc. iii. 147 (1832), in part (including the collections from Valparaiso of *Cruickshanks* and *Cuming* 550, excluding collections Buenos Aires (*Gillies*) and Valparaiso (*Bridges*) both of which are *S. media*), non L. (1762); sensu Gay, Fl. Chile i. 267 (1845) (because a specimen collected by *Gay* in Chile is labeled *A. media* by him and is actually *S. villosa*), non L. (1762). *Lepigonum villosum* Fisch. & Mey. Ind. Sem. Hort. Petrop. iv. 15 (1837), *nomen nudum. L. villosum* (Pers.) Kindb. Synop. Lepig. 16 (1856). *L. glandulosum* Liebm. Ind. Sem. H. Haun. 21 (1853), not Kindb. Mon. Lepig. 16 (1863) (which is based upon an entirely different African plant, *Arenaria glandulosa* Jacquin, Hort. Schoenb. iii. 56, pl. 355 (1798). *Arenaria Berteroana* Philippi in Linnaea, xxviii. 673 (1856). *Spergularia remotiflora* Steud. in Flora, 425 (1856), probably synonymous, according to description (the collection cited, *Bertero* 811, was not seen by me); Philippi in Anal. Univ. Chile, lxxxi. 768 (1892). *S. rupestris* sensu Steud. in Flora, 424 (1856) (because the cited specimens, *Bertero* 810 & 58, are *S. villosa*) non Camb. (1829); sensu Philippi in Anal. Univ. Chile, lxxxi. 771 (1892), for same reasons as above, non Camb. (1829). *Lepigonum Liebmannianum* Lange, Ind. Sem. H. Haun. 2 (1859); Kindb. Mon. Lepig. 27 (1863). *L. arenarium* Kindb. Synop. Lepig. 13 (1856) (because he cites *Arenaria media* Gay and the Coquimbo, *Gay*, collection which is probably *S. villosa*—see citations); Kindb. Mon. Lepig. 17, t. i, fig. 3 (1863); including the references, *S. villosa* Camb. and *A. media* Gay, and the collections, Coquimbo, Chile, *Gay*, probably, and

Talcahuano, *Pöppig*, and the left-hand plant and the seed with the erose-margined wing; and excluding the references, *S. grandis* Camb., *S. ramosa* Camb., *A. grandis* HBK. & DC., and the remainder of the figure and specimens cited, all of which apply to *S. grandis* and *S. ramosa*, *q. v.*). *L. arenarium* Kindb. var. *depressa* Kindb. Mon. Lepig. 17, t. i, fig. 4 (1863). *L. macrorhizum* (Réq.) Kindb. var. "seminibus alatis floribus paulo minoribus," Kindb. Mon. Lepig. 22 (1863) (because coll. by *Pöppig*, Chile ad Concon, is *S. villosa*). *L. trachyspermum* Kindb. Mon. Lepig. 31, t. ii, fig. 16 (1863), in part (including the references, *S. villosa* Camb. and *Spergula villosa* Pers., and the collection, *Bertero*, Chile (B.) (cf. under citations); and excluding the citations, Montevideo, *Sello* and Maldonado, *Camb. & St. Hil.*, which are *S. ramosa* and *S. rupestris*, and the fig. 16, which is *S. ramosa*). *Spergularia campestris* sensu Rohrb. in Mart. Fl. Bras. xiv. pt. ii, 267 (1872), in part (including, probably, citation, Montevideo, *Sello*,[1] and the reference, *S. remotiflora* Steud.; excluding European plants which are probably *S. rubra*), non *Arenaria rubra* var. *campestris* L. (1753); sensu Rohrb. in Linnaea, xxxvii. 229 (1871–73), probably in part (including "Forma diffusior inflorescentia laxiore pauciflora," etc. and reference, *S. remotiflora* Steud., though neither collection cited has been seen by the author; excluding "Forma multicaulis . . ."), non *Arenaria rubra* var. *campestris* L. (1753). *Spergularia marina* sensu Rohrb. in Mart. Fl. Bras. xiv. pt. ii, 273 (1872), in small part (including only at least one of the Montevideo, *Sello*, specimens (see citations) and the reference *Lepigonum rupestre* Kindb. only as to the *Sello* plants), non *Arenaria rubra* var. *marina* L. (1753). *S. villosa* α. *genuina* Rohrb. in Mart. Fl. Bras. xiv. pt. ii, 269 (1872), in part (including the references, *Spergula villosa* Pers., *Spergularia villosa* (Pers.) Camb., and *Lepigonum trachyspermum* Kindb. in part; and excluding *Lepigonum murale* Kindb. and the entire figure, which are *S. ramosa* and *S. rupestris*, *q. v.*); Rohrb. in Linnaea, xxxvii. 238 (1871–73), in part, for the same reasons as above. *S. villosa* var. β. *Berteroana* (Philippi) Rohrb. in Mart. Fl. Bras. xiv. pt. ii, 269 (1872);[2] Rohrb. in Linnaea, xxxvii. 239 (1871–73); Arech. in Anal. Mus. Nac. Montevideo, iii. (Fl. Uruguay i.) 94 (1901). *S. media* 2. "Forma capsula calycem aequante vel vix superante," Rohrb. in Mart. Fl. Bras. xiv. pt. ii, 271 (1872), in part (including the synonyms, *A. media* Gay and *L. arenarium* Kindb., and excluding the synonyms, *S. ramosa* Camb. and *Spergula racemosa* Dietr., which belong with *S. ramosa*); Rohrb. in Linnaea, xxxvii. 243 (1871–73), at least in part, for the same reasons as above. *S. Liebmanniana* (Lange) Rohrb. in Linnaea, xxxvii. 242 (1871–73). *S. media*, 3. "Forma dense caespitosa humilis capsula calyce breviore," Rohrb. in Linnaea, xxxvii. 243 (1871–73).[3] *Tissa villosa* (Pers.) Britt. in Bull. Torr. Bot. Club, xvi.

---

[1] Although no specimens were found by the author annotated in this manner by Rohrbach.

[2] The collection, "prope Vicuña, *Cl. Gay*," however, was not seen by the author.

[3] This form cannot possibly have any relationship with *Spergularia media* (L.) Griseb. under which he puts it.

62 (1889), as to source of name but not as to plants cited which are *S. pazensis*, *q. v.;* Britt. l. c. 129 (1889), excluding the Andean plants which are probably *S. pazensis*. *T. Clevelandi* Greene, Fl. Francisc. 127 (1891); Jepson, Fl. W. Mid. Calif. 170 (1901); Greene, Man. Bot. San Francisc. Bay, 36 (1894). *T. grandis* sensu Morong & Britt., in Ann. N. Y. Acad. Sci. vii. (Enum. of Pl. coll. by Morong in Paraguay) 53 (1892), in part (including citation, Buenos Aires, *Morong* 3, but excluding *Morong* 921 which is *Spergularia ramosa* var. *diffusa*), non *Spergula grandis* Pers. (1805). *Spergularia aprica* Philippi in Anal. Univ. Chile, lxxxii. 766 (1893). *Tissa rubra* sensu K. Brandegee in Zoe, iv. 84 (1893), non *Arenaria rubra* L. (1753). *S. Clevelandi* (Greene) Robins. in Proc. Am. Acad. xxix. 310 (1894) and in Gray, Synop. Fl. i. pt. i. 251 (1897); Jepson, Fl. Calif. pt. v. 494 (1914) and Man. Fl. Pl. Calif. 360 (1923); Munz, Man. So. Calif. Bot. 163 (1935). *Tissa glandulosa* (Liebm.) Reiche, Fl. Chile, i. 196 (1896). *T. media* var. *Berteroana* (Philippi) Reiche, l. c. 201 (1896). *Buda campestris* sensu Kuntze, Rev. Gen. iii. pt. ii, 13 (1898), in part at least (including citation, Chile, *Maule*)[1] non *Arenaria rubra* var. *campestris* L. (1753). *Spergularia rubra* sensu Arech. in Anal. Mus. Nac. Montevideo, iii. (Fl. Uruguay, i.) 91 (1901), non *Arenaria rubra* L. (1753). *Tissa argillosa* Greene ex C. F. Baker, West. Am. Plants, ii. 18 (1903), *nomen solum*. *Alsine Clevelandi* (Greene) House in Am. Midl. Nat. vii. 134 (1921).—South America, and introduced in North America: common in southern Chile and probably introduced in Uruguay around Montevideo and in the Argentine at Buenos Aires and La Plata, and also introduced in California about cities from San Diego north to San Francisco, and near Portland, Oregon. Chile: Prov. Coquimbo: Dept. La Serena: Punta de Teatinas (alt. ca. 10 m.), *Werdermann* 1542, October, 1925 (B.). Prov. Aconcagua: in stony pastures on hills and on river banks, Quillota, *Bertero* 810, October–November, 1829 (N. Y.,[2] F. M., Leiden, immature); on roadsides, Valparaiso, *Buchtien*, December 8, 1895 (U. S., G.); Valparaiso, *Meyen*, 1831 (B., 2 sheets, one marked by Kindb. 1861,[3] but with a combination which he never published); Valparaiso, *Claude-Joseph* 3619, October, 1925 (U. S.); Valparaiso, *Wilkes Exped.* (G., U. S., no seeds and puny specimens but probably *S. villosa*); Valparaiso, *Bridges*, 1830 (K., seeds unusually small, 0.45 mm. long); near Valparaiso, *Cuming* 550, 1831 (K.);[4] Quebrada las Zarras que domina Valparaiso, *Jaffuel* 637, November, 1910 (G.); Valle de Marga-Marga, 40 km. east of Valparaiso, *Jaffuel* 639, October, 1910 (G., immature); Quintero (La Ventana), *Marta H. Looser* 3374, February, 1936 (G.); Pangal Limache, *Gualterio Looser*, October 12, 1926 (G.); Quebrada del Lúcumo (alt. 10 m.), *G. Looser*, February 28, 1937 (G.). Prov.

---

[1] The collection, Villa Florida, Paraguay, *Kuntze*, not seen by author.

[2] Cited under *Spergularia rupestris* Steudel, in Flora, 424 (1856).

[3] Cited under *L. arenarium* var. *depressa* by Kindberg, Mon. Lepig. 17 (1863).

[4] Cited under *Arenaria media* by Hooker & Arnott in Hooker's Bot. Misc. iii. 147 (1832).

Santiago: San Antonio, *Asplund* 4301, July 23, 1921 (B., immature); Santiago, *R. A. Philippi* (U. S.);[1] Santiago, *Claude-Joseph* 756, January, 1919 (U. S.); Santiago, *E. E. Gigoux*, December, 1909 (G., immature); Cerro Blanco, vicinity of Santiago, *G. T. Hastings* 165, November 16, 1900 (U. S., U. C., N. Y.); Penaflor, Cerro Manuel Rodriquez, 500 m., *G. Looser* 3730, October 2, 1938 (D. S.); same locality and date, in hot sunny places in very hard soil, *G. Looser* 3731 (D. S., prostrate, matted plant with short internodes and leaves and small seeds); Mercedes, *Philippi*, November, 1888 (Santiago, photo. and fragment in G.). Prov. Colchagua: *Phillippi* dedit 1876 (B.,[2] nearly mature); Rancagua, *Bertero* (Santiago, photo. in G., type of *Arenaria Berteroana*);[3] *Bertero* 59 (Leiden), but locality should be "pascuis sterilibus montis La Leona," Rancagua;[4] Curico, *Claude-Joseph* 5204, January 1928 (U. S., unusually small seeds, only 0.4–0.5 mm. long); Potrero Grande, Curico, *Barros* 252, January 19, 1927 (G.). Prov. Talca: Curepto, *Claude-Joseph* 3875, January, 1926 (U. S.); Ilico, coast of Prov. Talca, *Barros* 272, October 18, 1938 (G.). Prov. Maule: Constitucion, *Claude-Joseph* 2075, December, 1922 (U. S., immature); Maule, *Kuntze*, February 8, 1892 (N. Y., no seeds, marked *Buda rubra* (L.) Dum. by Otto Kuntze).[5] Prov. Concepcion: Concepcion, *Claude-Joseph* 4067, November, 1925 (U. S.); vicinity of Concepcion, *Jaffuel* 2992, December, 1931 (G.); Yumbel, *Claude-Joseph* 5697, January, 1928 (U. S.); Talcaguano, *Chamisso*, 1816 (B., marked by Kindberg but with a name which he never published);[6] in sandy and clay pastures near Concepcion, *Poeppig* 131 (B., Leiden; Berlin specimen marked *Lepigonum macrorhizum* (Réq.) by Kindberg 1861,[7] and *Spergularia marina* (L.), forma calyce capsulam aequante by Rohrbach). Prov. Arauco: sandy knolls in salt marsh, Arauco, *Pennell* 12933, March 6, 1925 (G., F. M.); Arauco, *Barros* 284, November 15, 1938 (G.); Peumo, *Claude-Joseph* 1436, September 20, 1921 (U. S.). Prov. Valdivia: *E. Reed* (K.). Chile, no locality: mittleres Chile, *Claude-Joseph*, November 19, 1922 (B. 2 sheets); Chile, "*Bertero* misit" 1830 (B., immature, marked *Lepigonum villosum* by Kindberg 1861[8] and *Spergularia remotiflora* Steud. ("in sabulosis secus torrentes Valparaiso, Chile, *Bertero*") by Rohrbach); Chile, *Cl. Gay* (B., marked *Arenaria* (*Lepigonum*) *media* by Gay, Fl. Chil.);[9] Chile, *Bridges* (B., marked *Lepigonum arenarium* by Kindberg,

---

[1] Marked *Arenaria media* L. in same hand as Santiago—label has slit in it, as though it was coll. label, probably Philippi's handwriting.

[2] Marked *Arenaria media* L. but in a different hand from above.

[3] Philippi in Linnaea, xxviii. 673 (1856).

[4] According to Rohrb. in Linnaea, xxxvii. 239 (1871–73).

[5] Cited under *Buda campestris* by Kuntze, Rev. Gen. iii. pt. ii. 13 (1898).

[6] Cited under *Lepigonum arenarium* var. *depressum* by Kindberg, Mon. Lepig. 17 (1863).

[7] Cited as a var. of *L. macrorhizum* with winged seeds and flowers a little smaller by Kindberg, Mon. Lepig. 22 (1863).

[8] Cited under *Lepigonum trachyspermum* by Kindb. Mon. Lepig. 31 (1863).

[9] Probably the Gay spec. cited under *L. arenarium* by Kindb. Mon. Lepig. 17 (1863).

1861); Chile, *Bertero* 58 (G.);[1] Chile, *Bertero* (H. B. 32) (B.); Chile, *Cruickshanks* (K.,[2] mounted on a sheet with *Arenaria media* in Herb. Hooker); Chile, *Bertero* 1431 (Leiden). BRAZIL: "Campos da Bocaina, Sao Paulo 19401 . . . Nov. C."[3], *Glaziou* 19401, 1891–92 (B.). URUGUAY: DEPT. MONTEVIDEO: Sayago, *Herter* 10445, fl. October, 1907–10 (B.); Montevideo, *Arsène-Isabelle* 1838 (K., from Herb. J. Gay, immature); Montevideo, *Sello* 207 (B. 2 sheets, one marked *Spergularia salina* by Rohrbach and the other "*Spergularia marina*, forma capsula vix exserta (sp. *rupestris* Camb.)" by Rohrbach); Montevideo, *Commerson* "(sans nom.)" (Paris, Herb. Jussieu no. 13058, TYPE probably, photo. in G.,[4] immature but flowering); Montevideo, *Commerson* (B. ex Museo Paris 1820, immature, probably type collection); Buenos Ayres and Monte Video, *Commerson* (N. Y., type collection?). ARGENTINA: PROV. SAN JUAN: *R. Roldan Z.*, November 1, 1912 (La Plata). PROV. ENTRE RIOS: Concepcion del Uruguay, *Lorentz*, October, 1875 (B.); Delta del Paraná, arroyo Negro, *Cabrera* 1979, November 24, 1931 (B., La Plata, unusually small seeds, 0.45 mm. long). PROV. SANTA FE: *Cristie* 94 (K.). PROV. BUENOS AIRES: abundant in saline meadows, Avellaneda, *Parodi* 9877, October 10, 1931 (G., immature); low saline places about the Rio Paraná, Campana F. C. C. A., *Burkart* 5664, November 5, 1933 (B., 2 sheets); in saline places, Campana, *Parodi* 8608, October 27, 1928 (G., B.); Buenos Aires, *Morong* 3, 1888–1890 (N. Y.);[5] rich meadows between La Plata and Ensenada, *Cabrera* 1776, October 9, 1931 (G., F. M., immature); Camina (Rio de la Plata), *Cabrera* 2897, October, 1934 (La Plata); Bosque, La Plata, *Cabrera* 3272, October 29, 1934 (La Plata); La Plata, *E. L. Ekman* 1876, October 20, 1907 (U. S., N. Y.); Belgrano, Saavedra and Palermo, *Bettfreund & Koester* 275, 1888 (B., immature); saline fields, Part. Ayul, Estancia Salaberry, *Osten* (B.). NORTH AMERICA: MEXICO: LOWER CALIFORNIA: east slope Coronado Is., *R. B. Cowles* 8, March 29, 1921 (Pam.). CALIFORNIA: San Diego Co.: San Diego, *Cleveland* 526, 1877 (G., marked *S. Clevelandi* by Robinson[6] and *Tissa villosa* by Britton);[6] San Diego, *K. Brandegee*, about 1891 (G., marked *S. Clevelandi* by Robinson);[7] common about dwellings, San Diego, *Brandegee* 3373, April 27, 1903

---

[1] Cited under *Spergularia villosa* var. *Berteroana* by Rohrb. in Fl. Bras. xiv. pt. ii. 269 (1872) and under *S. rupestris* by Steud. in Flora, 424 (1856).

[2] Cited under *Arenaria media* in Hook. Bot. Misc. iii. 147 (1832).

[3] Locality obtained from Bull. Soc. Bot. France lii. Mém. 3: 35 (1905), where there is a list of plants of central Brazil by *Glaziou*, also his itinerary in Brazil.

[4] Has a tag pasted on top of label which says *Spergula villosa* Poir. Encycl. & Pers. Synops. i. This probably was not put on the sheet at time of naming by Persoon. The specimen, therefore, was probably not annotated by Persoon.

[5] Cited under *Tissa grandis* by Morong & Britt. in Enum. of Pl. Coll. Morong in Paraguay, 53 (1892) in Ann. N. Y. Acad. Sci. vii. 53 (1892).

[6] Cited under *S. Clevelandi* by Robins. in Proc. Am. Acad. xxix. 310 (1894); also cited under *Tissa villosa* by Britt. in Bull. Torr. Club, xvi. 129 (1889) and designated the type of *Tissa Clevelandi* Greene by Jepson, Fl. Calif. v. 494 (1914).

[7] Cited under *S. Clevelandi* by Robins. in Proc. Am. Acad. xxix. 310 (1894).

(G., U. S., Cal. Acad., U. C., Pom., D. S., Notre Dame); National City, *Abrams* 3525, May 18, 1903 (G., U. S., U. C., D. S., Pom.); 1 mile sw. of Otay, on road to Tijuana (Lower Sonoran), *C. B. Wolf* 2088, May 26, 1931 (Cal. Acad., D. S., Pom.). Orange Co.: damp ground, Newport Bay, *L. M. Booth,* 1089, May 24, 1932 (U. C., Pom.). Los Angeles Co.: well established at side of path, Claremont, *I. M. Johnston* 1976, April 25, 1918 (U. S., D. S., Pom.). Santa Barbara Co.: along the streets, near Santa Barbara, *Eastwood* 207, May, 1908 (U. S.); Santa Barbara, *Wooton* 1912 (U. S.). Monterey Co.: Camphora, *Eastwood & Howell* 2186, May 5, 1936 (G., Cal. Acad.). Santa Clara Co.: San Jose, *Mrs. E. A. Bush* 1880 (U. S.); clay ridges in foothills near Stanford Univ., *C. F. Baker* 666, May 27, 1903 (G., U. S., Cal. Acad., Pom., U. C., Notre Dame, distributed as *Tissa argillosa* Greene). San Francisco Co.: Mission Hills, San Francisco, *Michener,* June, 1893 (G., D. S.); San Francisco, *Jepson,* May 20, 1891 (G.); Presidio, San Francisco, *Greene,* May 27, 1893 (U. C.); Presidio, San Francisco, *Heller* 5699, June 12, 1902 (G., D. S., Pom., U. S.); Laurel Hill Cemetery, San Francisco, *Eastwood* 235, June 7, 1912 (G., U. S., Cal. Acad.). Solano Co.: Benicia, *Eastwood* 10509, May 15, 1921 (Cal. Acad.). El Dorado Co.: New York Ravine, *K. Brandegee,* May 8, 1907 (U. C.). San Diego Co.: roadsides, old clearing, La Jolla, *F. E. & E. S. Clements* 48, April 7, 1914 (G., U. C.). OREGON: Multnomah Co.: Lower Albina, *E. P. Sheldon,* July 21, 1902 (Ore.).

No specimen has been located labeled "rather sandy uplands about San Diego," as the type of *Tissa Clevelandi* Greene should be. There is a collection made in San Diego, *Cleveland* 526 (1877), which probably is the one cited by Greene. This collection was later designated as the type of Greene's species by Jepson. In the Greene herbarium at Notre Dame there is a specimen collected by *T. S. Brandegee* in San Diego, April 27, 1903, which was labeled by him and marked typical. There is another of the same collection, marked not typical, which differs only in being more matted and with the leaves growing in every direction. Furthermore, no specimen has been found labeled "gravelly knolls at the Presidio, San Francisco." However, a collection made and labeled by Greene in 1893 from this locality indicates what the plant probably was. All the plants mentioned in the description are alike in all diagnostic characters and to my mind are identical with the South American plants cited above.

Since on the Pacific Coast of North America the plant always occurs around cities or other habitations, one concludes that it was introduced from South America. It has been collected only from the vicinity of the large cities of Montevideo, Uruguay and Buenos Aires and La Plata, Argentina, while it seems very common in south-central

Chile. *One is inclined to think, then, that Chile is its native habitat,* though further work by botanists in South America is needed before this surmise can be verified.

This species shows great variation in habit, from robust sprawling plants to short, delicate, matted ones. These occur sporadically throughout the range, due seemingly to ecological conditions (see *G. Looser* 3730 and 3731, Penafor, Cerro Manuel Rodriguez, examples of both extremes from the same place). Plants with extremely small seeds, 0.4 mm. long, occur sporadically throughout the range and may have small or large capsules. Plants with papillose seeds occur just as often as those with them non-papillose and in the same geographic range.

30. S. COLLINA I. M. Johnst. (PLATE 595, FIGS. 4a–4c). *Annual with open dichotomous branching:* diffuse *stems* 1–5 from the base, 5–25 cm. long; *internodes* below the inflorescence few, 7–35 mm. long, 0.5–1.5 mm. in diameter: *leaves not fascicled,* fleshy, sparsely glandular-pubescent, mucronate, 6–18 mm. long, 1–2 mm. broad; *stipules* inconspicuous, *deltoid,* attenuate, 1.2–2 mm. long: *inflorescence a widely angled leafy cyme,* not sharply differentiated from vegetative parts, with elongated internodes, 1–3 cm. long; *bracts* foliaceous, 0.3–1.5 mm. long: *sepals* ovate-lanceolate, glandular-pubescent, 3.7–4.5 mm. long; *petals* white, ovate, 3.5–5 mm., usually equalling the calyx; *stamens* 10; *styles* 3, separating to the base as flower matures, 0.8–1.2 mm. long: *mature capsules* stipitate, 4–5.5 mm. long, exceeding the calyx by 0.3–1 mm.: *fruiting pedicels* filiform, strongly reflexed, the lower 8–22 mm. long: *seeds* 0.6–0.8 mm. long, *black, rounded at the summit, deeply sculptured in vermiform pattern with crowded, long, black papillae,* not winged.—Contrib. Gray Herb. lxxxi. 89 (1928); Macbride, Field Mus. Pub. Bot. xiii—Fl. Peru Pt. 2, no. 2, 630 (1937). *Drymaria molluginea* sensu Weberbauer in Engler & Drude, Veg. der Erde, xii. 144, fig. 9 (1911), non *Alsine molluginea* Lagasca (1815).—SOUTH AMERICA: open sandy hills on coast of Peru in Dept. Arequipa. PROV. ISLAY: DEPT. AREQUIPA: lower edge of green belt on desert hills in back of port, Mollendo, *Johnston* 3568, October 16, 1925 (G. TYPE, F. M.); after October rains, Mollendo, *A. S. Hitchcock* 22355, November 17, 1923 (U. S.); Atico, *Raimondi* 11609, November, 1863 (B.). MAP 11.

This plant was illustrated by Weberbauer in Engler & Drude, Veg. der Erde, xii. 144, fig. 9 (1911) but erroneously called *Drymaria molluginea* Didr. The latter name refers to a Mexican plant with bifid petals and has its source from plants grown in the Hortus Regius, Madrid, from seeds collected by *Sessé and Mocino* in "Nova Hispania." Lagasca called it *Alsine molluginea*[1] (photo. and drawings of

---

[1] Lagasca, Gen. et Spec. 13, no. 170 (1815).

seeds and stipules in Gray Herb.) but it later became *Drymaria molluginea* (Lag.) Didr.[1]

31. S. **Spruceana**, spec. nov. (TAB. 595, FIG. 2a–2c). Perennis: radice centrale ad 1 cm. crassa: caudice ramoso vel simplice, caulibus multis gracilibus diffusis, 3–30 cm. longis; internodiis caulis partis efloriferi gracilibus, 0.8–1.5 mm. crassis, 3–43 mm. longis: foliis plerumque fasciculatis linearibus complanatis mucronatis margine villoso-glanduloso excepto glabris, 3–45 mm. longis, 0.5–1 mm. latis: stipulis scariosis albidis triangulari-acuminatis, 3–6 mm. longis, basi vel paullo supra basin connatis: floribus in cymam contractam dispositis; bracteis infimis longis foliosis, ad 15 mm. longis supremis minimis vel obsoletis; internodiis saepe sparse villoso-glandulosis, inferioribus 6–15 mm., superioribus brevissimis, 1.5–3 mm. longis: sepalis lanceolatis, glabris, plerumque glandulis minutis pallidis puncticulatis praecipue in parte superiore, margine scariosis, recurvatis, apice incurvato saepe cucullato, 3.2–4.8 mm. longis; petalis albis ovatis, 2–2.5 mm. longis; staminibus 10; stylis 3, ad basim divisis: capsulis maturis 3–4.5 mm. longis, sepala aequantibus vel eis 0.1–0.5 mm. brevioribus: pedicellis fructiferis haud reflexis, infimis, 2–5 mm. longis: seminibus pallide brunneis lucidis, lineis vermiformibus intertextis sculptis, saepe verrucis minutis elongatis haud papillatis, exalatis, vel saepe appendice parva scariosa ornatis, 0.5–0.6 mm. longis.—SOUTH AMERICA: found only in the high Andes of Ecuador. ECUADOR: 9937 ft., Quito, Prov. Pichincha, *Jameson* (K.); vicinity of Quito, Latacunga or Ambata in sandy places, *Sodiro* 123 (B.); Quitensian Andes, *Couthouy*, 1855 (G., N. Y.); Tixan, Prov. Chimborazo, *Rose* 22403, August 27, 1918 (G., U. S.); open ground Urbina, paramo on east flank of Mt. Chimborazo, Prov. Chimborazo, alt. 3600 m., *A. S. Hitchcock* 22039, October 5, 1923 (U. S.); in Andibus Ecuadorensibus, *R. Spruce* 5444, 1857–9 (G. TYPE, K., B., F. M.). MAP 26.

The name *Spruceana* was suggested to me by an unpublished note of Britton's on the *Spruce* collection in the Gray Herbarium. It is a pleasure to name it after RICHARD SPRUCE, a courageous explorer and an accurate observer.

32. S. **colombiana**, spec. nov. (TAB. 596, FIG. 4a et 4b). Perennis vel annua?: caulibus saltem 12–25 mm. longis, multi-ramosis: internodiis caulis partis efloriferi glabris, 6–20 mm. longis, 0.4–1.2 mm. crassis: foliis paululum fasciculatis, 1–2 foliis axillaribus, mucronatis, glabris, 15–20 mm. longis, 0.6–0.8 mm. latis; stipulis late lanceolato-acuminatis, 4.5–5.5 mm. longis: floribus in cymam laxam ramosam dispositis; internodiis infimis 7–15 mm. longis, 0.4–0.6 mm. crassis; bracteis foliosis, supremis minimis: sepalis linearibus, sparse villoso-glandulosis, 4.2–5.6 mm. longis; petalis albis, ovatis, 2.8–4 mm. longis, sepalis 1.6 mm. brevioribus; staminibus 5–10; stylis 3, ad basim

---

[1] Didr. in Linnaea, xxix. 738 (1859).

divisis, 0.6 mm. longis: capsulis pene maturis, 5–5.2 mm. longis sepalis aequantibus vel eis 1 mm. longioribus pedicellis fructiferis filiformibus, villoso-glandulosis, patentibus, 5–7 mm. longis: seminibus immaturis, lineis vermiformibus intertextis sculptis, alatis, ala albida, scariosa, 0.2 mm. lata.—South America: known as yet only from Bogota, Colombia. Colombia: Prov. Bogota: Cordillera de Bogota, 27 m. alt., New Granada, *J. Triana,* 1851–1857 (K. type, N. Y.); *Linden* 178 (K.). Map 27.

33. S. **platensis** (St. Hil. & Adr. Juss.) Fenzl (Plate 595, figs. 3a–3d and map 28). Annual: *caudex* bearing 3–many diffuse stems, usually many, 5–30 cm. long; *internodes of stem below the inflorescence* glabrous, slender, 8–40 mm. long, 0.4–1.4 mm. in diameter: *leaves* filiform, glabrous, mucronate, usually not fascicled or, if so, with only 1–2 leaves at the axils, 10–40 mm. long, 0.4–1.2 mm. broad; *stipules deltoid,* acuminate, as long as broad or slightly longer than broad, 1.5–3.5 mm. long: *inflorescence a much compounded cyme, glabrous throughout; internodes* 3–28 mm., usually 7–15 mm. long; *bracts* usually minute, 0.5–10 mm., usually 0.5–4 mm. long: *sepals broadly lanceolate, bluntly tipped,* 0.8–1.6 mm. long; *petals* minute, white, narrowly ovate, 0.6–1 mm. long, as much as 0.4–1 mm. shorter than the calyx; *stamens* 5; *styles* 3, erect when young, separated nearly to the base, 0.3–0.4 mm. long: *mature capsules* 1.4–2.6 mm., usually 1.8–2.2 mm. long, as much as 0.4–1 mm., usually 0.6–0.8 mm. longer than the calyx: *fruiting pedicels* filiform, never reflexed, the lowest 2–8 mm., usually 4–6 mm. long, the upper ones very short: *seeds* 0.35–0.4 mm. long, *light or reddish brown, often with a silvery tinge, often angular because of compression in the capsule, deeply sculptured in interwoven vermiform pattern, usually covered with large, brown, glandular, often cup-shaped papillae,* not winged.—Ann. Wien. Mus. ii. 272, in note (1839); Rohrb. in Mart. Fl. Bras. xiv. ii. 267, pl. 61, fig. 2 (1872); Rohrb. in Linnaea, xxxvii. 228 (1871–73); Robins. in Gray, Synop. Fl. i. 251 (1897); Arech. in Anal. Mus. Nac. Montevideo, iii. (Fl. Uruguay i.) 93 (1901); Jepson, Fl. Calif. 495 (1914) and Man. Fl. Pl. Calif. 361 (1923); Munz, Fl. So. Calif. 163 (1935). *Balardia platensis* St. Hil. & Adr. Juss. in St. Hil. Fl. Bras. Mer. ii. 181, pl. 111 (1829); C. Gay, Fl. Chile, ii. 524 (1846). *Lepigonum gracile* Wats. in Proc. Am. Acad. xvii. 367 (1882). *Tissa gracilis* (Wats.) Britt. in Bull. Torr. Bot. Club, xvi. 128 (1889); Small, Fl. Se. U. S. 418 (1903). *Buda platensis* (St. Hil. & Adr. Juss.) Kuntze, Rev. Gen. i. 50 (1891). *Spergularia angolensis* Philippi in Anal. Univ. Chile, lxxxi. 771 (1892). *S. gracilis* (Wats.) Robins. in Proc. Am. Acad. xxix. 311 (1894). *Tissa platensis* (St. Hil. & Adr. Juss.) Hassler in Bull. Herb. Boiss. sér. 2, vii. 931 (1907). *T. platensis* subsp. *septentrionalis* Hassler[1] l. c. *T. platensis* var. *septentrionalis* (Hassl.) Hassler, Contrib. Fl. Chaco

---

[1] This variety must be the same as the species because the characters given, such as stipules widely ovate, petals deficient, style slightly joined at the base, are not sufficient to separate this from the species nor do they characterize var. *Balansae.*

Argentino-Paraguayo, pt. i. (Fl. Pilcomay.) 58 (1909). *S. texana* Hy, Rev. Gen. Bot. xxv. 316 (1913) in obs.[1] *Alsine platensis* (St. Hil. & Adr. Juss.) House in Am. Midl. Nat. vii. 134 (1921). *S. platensis* var. *septentrionalis* (Hassl.) Hauman & Irigoyen in Anal. Mus. Nac. Hist. Nat. Buenos Aires, xxxii. 193 (1923).—SOUTH AMERICA: common in the Argentine, and probably introduced in central Chile, southern California and Texas. BRAZIL: no locality, "*St. Hilaire* misit," 1830 (B., marked *Balardia platensis*, probably in Cambessedes' handwriting). ARGENTINA: PROV. CORRIENTES: salt marshes, Cado de Aposo, *Niederlein* 1171, October 8, 1886 (B.). PROV. ENTRE RIOS: on muddy ground on the banks of the river Gualeguagehn, Concepcion del Uruguay, *Lorentz* 1203, October, 1877 (B.); Medanos, *Burkart* 3572, December 3, 1930 (B.); Concepcion del Uruguay, *Lorentz* 1707, September, 1877 (B.); Delta Paraná, Arroyo Brazo Largo, *Burkart* 8295, December 12, 1937 (F. M.); Islas Victoria, *Burkart* 8623, December 26, 1937 (F. M.); Fontana (Chaco), *Meyer* 2375, November, 1937 (G., D. S.). PROV. SANTA FE: Malabrigo, F. C. S. F., *Burkart* 5749, November 12, 1933 (B.). PROV. TUCUMÁN: on the banks of a dry lake, alt. 300 m., Chanar Pozo, Dept. Leales, *Venturi* 413, September 9, 1919 (U. S.); alt. 450 m. Rio Sali, Dept. Capital, *Venturi* 1908, September 13, 1922 (G., U. S., La Plata); rich meadows, 3000 m. alt., Sierra de Cajou, Dept. Tafi, *Venturi* 10055, January 3, 1929 (U. S.). PROV. BUENOS AIRES: virgin pastures, Avellaneda, *Parodi* 5847, October 18, 1924 (B.); low brackish places about the R. Paraná, Campana, F. C. C. A., *Burkart* 5655, November 5, 1933 (B.); low flood-plain of R. Paraná, Isla Mariel, *Burkart* 3052, December 6, 1928 (B.); Buenos Aires, *Bettfreund* 188b + 130, misit 1888 (B.); Buenos Aires, *Tweedie* (K.); wet land, Abasto, near La Plata, *Cabrera* 2388, October 19, 1932 (La Plata); Bahia Blanca, *Darwin* (K.). PROV. RIO NEGRO: Rio Negro, *Aug. Scala* 47 (n. 104 Herb. Scala Rio Negro), January, 1916 (La Plata); in irrigated ground, General Roca and vicinity, Rio Negro Valley (250–360 m. alt.), *Walter Fischer* 166, Nov. 14, 1914 (G., U. S., N. Y., F. M.). Locality not found: Las Palmas, *Niederlein* 128, Aug. 30, 1892 (B.). Locality not given: *Hicken* 486 (Chloris Platensis Argentina) (N. Y., Cal. Acad.). CHILE: PROV. SANTIAGO: in plateis urbis, Santiago, *R. A. Philippi*, pl. Chilens. ed. *R. F. Hohenacker* 625 (K.); in the city of Santiago, *Philippi* 1250 (B., marked *Balardia platensis*); *Philippi* ded. 1888 (B.); malza frecuente, Santiago, *Looser* 89, November 10, 1924 (G.). PROV. BIO-BIO: Dept. Angol: Angol, *Philippi* 2284, November, 1887 (Santiago, photo. and fragment in G., type of *S. angolensis* Philippi). No definite locality given: Chile (Leiden), no collector given. NORTH AMERICA: TEXAS: wet sands near Dallas, *Reverchon*, April (Curtiss-N. Am. pl. no. 333* and Texas Flora 72) (G., U. S., B., one of the Berlin sheets and the Gray collection marked *Lepigonum*

---

[1] Belongs to this species because of the citation, Texas, *Reverchon*, and white flowers and naked cymes, which in combination do not apply to any other species of the region.

gracile[1] by Watson); sandy lands, common, Dallas, *Reverchon* (G.); common in wet places, Columbia, Brazos R., *Bush* 79, April 20, 1900 (G., U. S.). CALIFORNIA: Riverside Co.: desiccating mudflat, one half mile south of Lake Elsinore, *Munz* 5070, April 29, 1922 (Pom., U. C.). Los Angeles Co.: dried ponds near Compton, *Nevin & Parry*, 1881 (G., marked *Lepigonum gracile* by Watson)[2]; Los Angeles, *Parry* 15, 1881 (G., U. S.,[3] marked *L. gracile* by Watson); low brackish flats near coast, Bixby, *Braunton* 436, June 20, 1902 (U. S.), marked *Lepigonum gracile* by Watson); on adobe mesa between Rivera and Florence, *Abrams* 3252, April 14, 1903 (G., U. S., D. S., U. C., Pom.); Inglewood, *Abrams* 1494, April 12, 1901 (D. S., Pom.). San Diego Co.: Carriso Creek, *Brandegee*, April 20, 1893 (U. C.); Otay, *Orcutt* 1201, May 13, 1882 (G.).[3]

S. platensis is quickly separated from all other Spergularias by its delicate habit, very small and numerous capsules, and much compounded cyme. However, there are no characters sufficiently important to warrant placing it in a separate genus such as *Balardia* St. Hilaire & Adr. Juss.[4]

The geographical distribution of this species is very peculiar. It is evident that Argentina is its native home and that it was introduced into Chile, since it has only rarely been collected there and from civilized places. It also seems probable that the Californian and Texan stations represent introductions, though, to prove the point, more collections should be made, especially with historical information regarding the localities at hand.

34. Var. **Balansae**, var. nov. (TAB. 595, FIG. 3e et 3f). Perennis: caudice nodosa, 1–2 caulibus gracilibus erectis, 12–18 cm. longis; internodiis caulis partis efloriferi gracilibus, glabris, 7–24 mm. longis, 0.4–0.6 mm. crassis: foliis vulgo haud fasciculatis vel interdum 1–2 foliis axillaribus, filiformibus, glabris, mucronatis, 15–30 mm. longis, 0.4–0.8 mm. latis; stipulis minimis, triangularibus, tam longis quam latis, 1.2–1.6 mm. longis: floribus in cymam patentem simplicem glabram dispositis; internodiis filiformibus, infimis 4–12 mm. longis; bracteis 0.6–2.2 mm. longis: sepalis lanceolatis, apicibus obtusis, glabris, 2.2–2.8 mm. longis; petalis albis, anguste ovatis, 1.2–1.4 mm. longis; staminibus 5, sepalis adversis; stylis 3, 0.4 mm. longis, ad basim divisis: capsulis maturis 3.2–3.8 mm. longis, sepalis 1–1.2 mm. longioribus; pedicellis fructiferis filiformibus, haud reflexis, infimis

---

[1] Cited as Curtiss no. 333*, under *Lepigonum gracile* by Sereno Watson in Proc. Am. Acad. xvii. 367 (1882), and also under *Tissa gracilis* by Britt., in Bull. Torr Bot. Club, xvi. 128 (1888).

[2] Cited under *Lepigonum gracile* by Sereno Watson, but as collected only by *J. C. Nevin*.

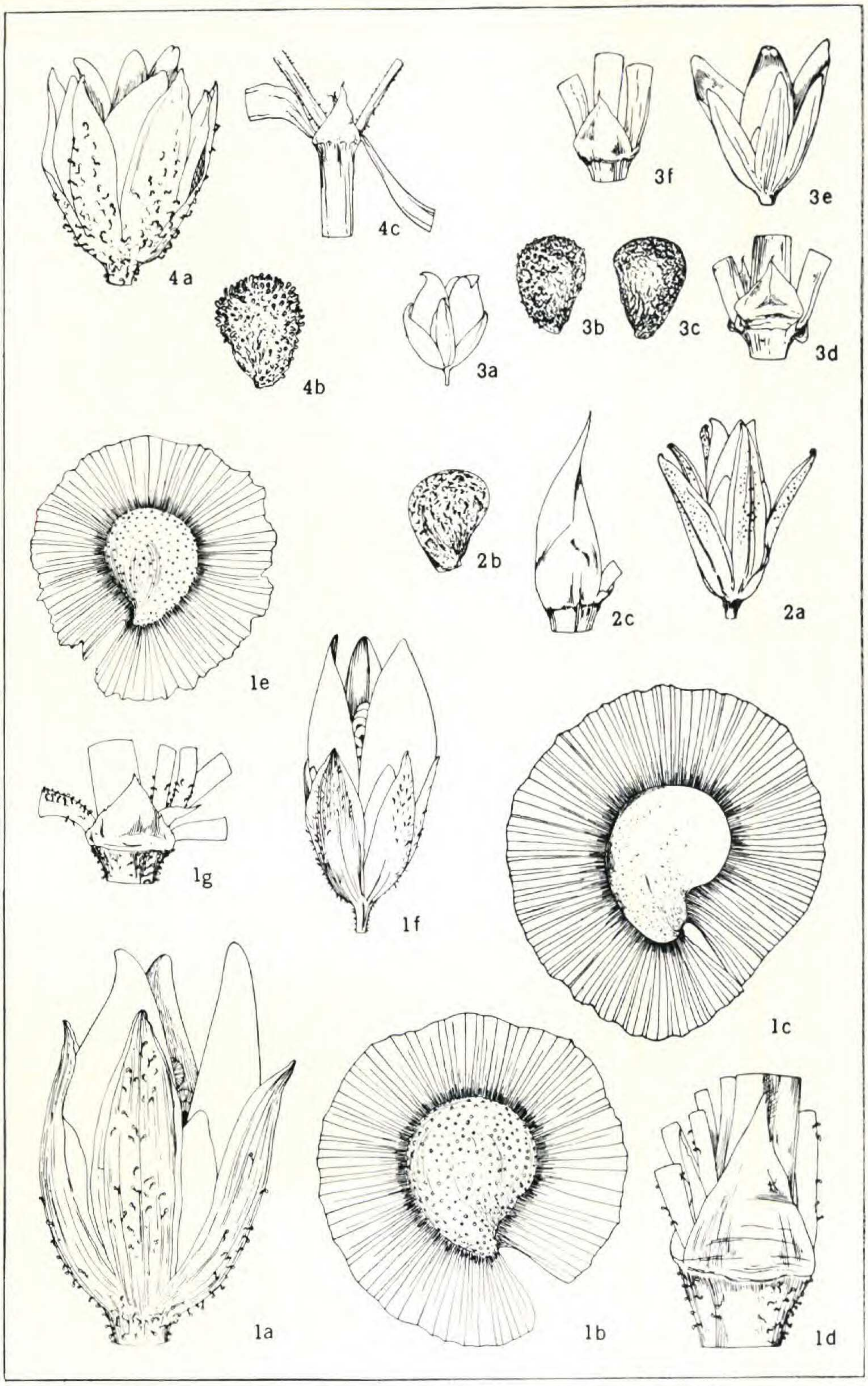
[3] Cited under *Tissa gracilis* (Wats.) Britton in Bull. Torr. Bot. Club, xvi. 128 (1888).

[4] In St. Hilaire, Fl. Bras. Mer. ii. 180, t. 111 (1829).

7–10 mm. longis: seminibus eis var. typicae similibus.—SOUTH AMERICA: known only from Paraguay. PARAGUAY: in the prairies in impermeable clay soil, *Balansa* 2271, May 27, 1874 (K., TYPE); Villa Fonda, *Kuntze* (N. Y., marked *Buda campestris* by Otto Kuntze).

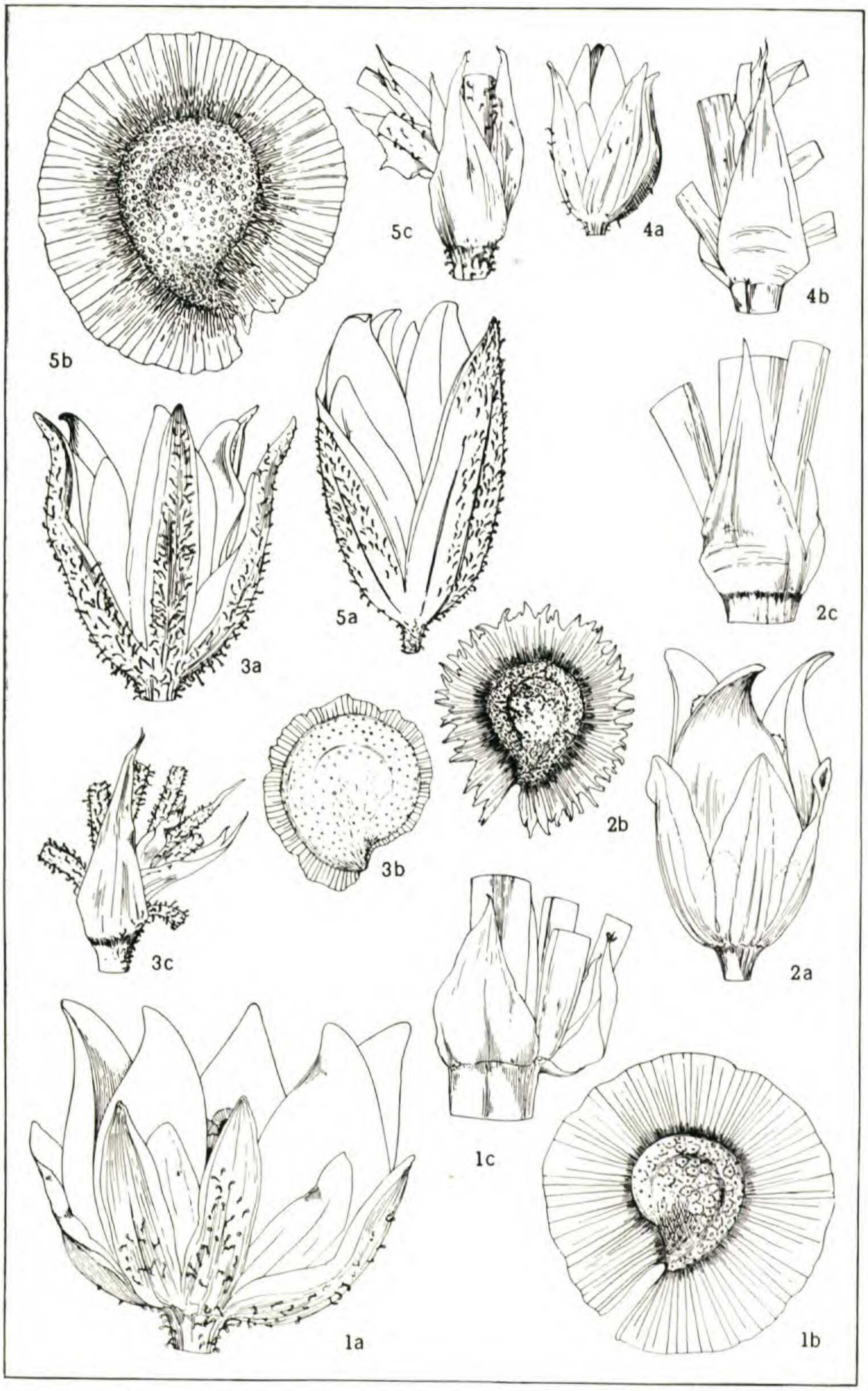
The variety differs from the typical form of the species in erect habit, perennial root, smaller stipules, simple cyme, and larger sepals and capsules. It is similar in its lack of pubescence, shape of stipule, number of stamens, length of style, leaves, petals, and, most important of all, in having exactly the same seeds. The latter fact is the main reason for giving it varietal rather than specific rank.

35. S. RAMOSA Camb. (PLATE 595, FIGS. 1a–1d and MAP 29). Perennial with a heavy ligneous central root: *caudex* well developed, knotty and branched, bearing from 1–15 nearly always erect stems, 8–37 cm. long, often budded from those of the previous season; *internodes of the stem below the inflorescence* usually glabrous though sometimes glandular-pubescent, 4–35 mm., usually 8–20 mm. long, 0.4–2.5, usually 0.8–2 mm. in diameter: *leaves fascicled*, filiform, mucronate, 10–45 mm. long, 0.5–1 mm. wide, usually glabrous, occasionally densely glandular-pubescent; *stipules lanceolate-acuminate, very broad at the base, at least twice as long as broad*, 2.5–7 mm., usually 3–5 mm. long: *inflorescence always glandular-pubescent throughout* with *internodes* roughly equalling or somewhat shorter than those below, 5–30, usually 10–20 mm. long, 0.4–1 mm. in diameter with minute *bracts* 1–4, usually 1.2 mm. long: *sepals* broadly linear-lanceolate, with a narrow scarious margin, always glandular-pubescent, 4.5–10 mm., usually 6–8 mm. long; *petals* white, ovate, 3–8 mm., usually 4–6 mm. long, 0.5–4 mm., usually 1–3 mm. shorter than the calyx; *stamens* 6–9; *styles* 3, parted to the base, 1–1.4 mm. long: *mature capsules* with valves often purple-tinged inside at the apex, 6–11.5 mm., usually 7–9 mm. long, occasionally equal to the calyx but usually 0.5–4 mm., commonly 0.5–2 mm. longer than the calyx: *fruiting pedicels* never reflexed, the lower 5–21 mm. long: *seeds* 0.6–0.9 mm., usually 0.7–0.8 mm. long, *light brown, dull, rounded in outline, surface usually smooth but sometimes covered with regularly arranged, brownish papillae, surrounded by a broad, shining, entire wing, often tinged with brown*, 0.3–0.7 mm., usually 0.4–0.6 mm. wide.—Camb. in St. Hil. Fl. Bras. ii. 178 (1829); Gray, Bot. Wilkes Exped. 1838–42, i. 121 (1824); Kindb. Synop. 16 (1856) (though Kindberg questioned whether it was a *Spergularia* and placed it under species excluded); Arech. in Ann. Mus. Nac. Montevideo, iii. (Fl. Uruguay, i.) 95 (1901). *Arenaria grandis* sensu HBK., Nov. Gen. et Sp. vi. 24 (1823), ex char., "Vidi in A. grandi: stamina 10 et stylos tres; . . .", non *Spergula grandis* Pers. (1805). *Arenaria grandis* sensu DC. Prod. i. 401 (1824), in small part, including only the reference HBK., non *Spergula grandis* Pers. (1805); Gay, Fl. Chile, i. 267 (1845), for the most part, excluding



Spergularia: stipule, calyx and capsule, × 5; seeds × 25.

S. ramosa, figs. 1a–1d; var. diffusa, figs. 1e–1g. S. Spruceana, figs. 2a–2c. S. platensis, figs. 3a–3d; var. Balansae, figs. 3e and 3f. S. collina, figs. 4a–4c.



SPERGULARIA: stipule, calyx and capsule × 5; seeds × 25.
S. GRANDIS, figs. 1a–1c. S. LEVIS, figs. 2a–2c. S. RUPESTRIS, figs. 3a–3c. S. COLOMBIANA, figs. 4a and 4b. S. PAZENSIS, figs. 5a–5c.

only reference to DC. in part, non *Spergula grandis* Pers. (1805). *Spergularia macrocarpa* Presl, Rel. Haenk. ii. 9 (1831), excluding synonyms Pers. and DC. *S. racemosa* G. Don, Gen. Hist. Dichl. Pl. i. 426 (1831), probably an error in spelling for reference is made to Camb. *S. grandis* sensu G. Don, l. c., in part, including synonym *Arenaria grandis* HBK. and excluding *S. grandis* Pers., non *Spergula grandis* Pers. (1805); sensu Rohrb. in Mart. Fl. Bras. xiv. pt. ii. 271 (1872), in part (including the 3-merous element of the description and the synonyms *Arenaria grandis* HBK. and DC. "forma trigyna," *Spergularia macrocarpa* Presl, *Lepigonum grande* (Pers.) Kindb. and *Lepigonum arenarium* Kindb. in part (see the synonymy of *S. villosa*), and excluding the 5-merous element of description and all other synonyms, all of which elements belong with *S. ramosa, q. v.*), non *Spergula grandis* Pers. (1805); sensu Rohrb. in Linnaea, xxxvii. 236 (1871–73), in part, for the same reasons as above, non *Spergula grandis* Pers. (1805); sensu Macbride, Field Mus. Pub. Bot. xiii.—Fl. Peru pt. 2, no. 2, 631 (1937) (because collection cited is from Huanuco: Montana, *Haenke*), non *Spergula grandis* Pers. (1805). *Spergula racemosa* D. Dietr. Syn. Pl. ii. 1599 (1840), probably likewise an error, for reference is made to Camb. *Lepigonum grande* sensu Kindb. Syn. Lepig. 15 (1856), including ref. Presl and, in part, DC., non *Spergula grandis* Pers. (1805). *L. arenarium* Kindb. Mon. Lepig. 17, t. i, fig. 3 (1863), in part (including references HBK. and *S. ramosa* Camb., and the citations Montevideo, *Sello*, and Rio Negro, *Wilkes Exp.* and the right-hand plant in the figure including the entire-winged seed; excluding the remaining references, citations (*Lambert* ?), and illustration, all of which belong with *S. villosa*). *Lepigonum trachyspermum* Kindb. Mon. Lepig. 31, t. ii, fig. 16 (1863), in part (including Brazilian specimens and in part Montevideo, *Sello*, spec.; excluding references Camb. and Pers. and specimen, Chile, *Bertero*, which is *S. villosa*, and part of Montevideo, *Sello*, which is *S. rupestris*, and Maldonado?). *S. villosa* var. *α genuina* Rohrb. in Mart. Fl. Bras. xiv. pt. ii. 268, t. 61, fig. 1 (1872), in part (including only the specimen, Sorata, *Mandon* 946, and the figure; excluding the right-hand, narrow-winged seed which is from *S. rupestris*); Rohrb. in Linnaea xxxvii. 238 (1871–73), in part (including *Mandon* 946 and possibly part of the *Sello* collections; excluding all references which apply to *S. villosa* and *S. rupestris*). *S. media* 2. "Forma capsula calycem aequante vel vix superante," Rohrb. in Mart. Fl. Bras. xiv. pt. ii. 271 (1872), in part (including the synonyms *S. ramosa* Camb. and *Spergula racemosa* Dietr.; excluding the remainder, which belong with *S. villosa*); Rohrb. in Linnaea, xxxvii. 243 (1871–73), in part, for same reasons as above. *Buda marina* sensu Kuntze, Rev. Gen. iii. pt. ii. 13 (1898), because of citation Patagonia, *Moreno and Tonini* 343, non *Arenaria rubra* var. *marina* L. (1753). *Buda grandis* sensu Kuntze, l. c. (1898), in part (including citations, Rio Santa Lucia, Uruguay and Cochabamba, Bolivia;[1] excluding *Hauthal* 661, and

---

[1] Another collection cited here, Ceres, Cordoba, though not examined by the

Sierra de Solis, which are *S. levis*), non *Spergula grandis* Pers. (1805); sensu Macloskie in Rep. Princeton Univ. Exp. Patagonia, viii. pt. 1, 395 (1905), non *Spergula grandis* Pers. (1805). *S. villosa* sensu Macbride, Field Mus. Pub. Bot. xiii—Fl. Peru, ii. 633, probably (because he says the seeds are yellow, pedicels erect and spreading, and cites Mart. Fl. Bras. xiv. pt. 2, pl. 61, none of which data apply to *S. villosa* (Pers.) Camb.),[1] non *Spergula villosa* Pers. (1805).—SOUTH AMERICA: common in most of Argentina and southern Uruguay and adjacent southeastern Brazil, also local in Bolivia. BRAZIL: Brasilia meridionalis, *Sello* 3107[2] (B., seeds papillose on rim, marked *Lepigonum villosum* Kindb. 1861);[3] *Sello* 3107a[2] (B., seeds papillose on rim); Brazil, *Sello* 1840[4] (K., 2 of the plants only, seeds smooth); Porto Alegre, Rio Grande do Sul, *Tweedie* (K., part of coll. only, seeds papillose). BRAZIL: no locality, *Sello* (Leiden). URUGUAY: DEPT. CANELONES: river shores, Santa Lucia, *H. M. Smith* 53, November 14, 1922 (U. S., seeds smooth); gravelly, dry, exposed soil, Independencia, *Herter* 652, November, 1926 (U. S., seeds papillose). DEPT. MONTEVIDEO: Montevideo or R. v. Campos-Vitoria, *Sello* d. 2 (B., 5 sheets, K.; only part of most of the sheets, seeds papillose); Montevideo, *Sello* d. 394 (B., 2 sheets; only part of one sheet, seeds hubbled; marked *Lepigonum villosum* (Camb.) by Kindberg, 1861); Montevideo, *Sello* (B., seeds papillose; marked *Lepigonum villosum* by Kindberg, 1861); Montevideo, *Sello* (B., only part of the specimens, seeds papillose; marked *Lepigonum villosum* Kindb., 1861); Montevideo, *Sello* (B., seeds papillose, marked *Lepigonum marinum* by Kindberg, 1861); Montevideo, *Capt. King* (K., immature but has 3 styles, mounted on a sheet with *Arenaria bonariensis* in Hooker Herb.); Montevideo, *Gibert* 410, 1866 (K., seeds smooth); Montevideo, *Sello* d. 2178 (B., seeds smooth, marked *Lepigonum arenarium* by Kindberg, 1861);[5] in pasture lands, near Montevideo, *Safford*, October 24, 1886 (U. S., seeds papillose); exposed dry ground, Arroyo Piedras, *Herter* 652^b, February 5, 1928 (N. Y., seeds papillose only on rim); Pocitos, *H. M. Smith* 15, October 14, 1922 (U. S., seeds smooth); exposed soil, Pocitos, *Herter* 159, November, 1924 (G., B., U. C., seeds smooth); Cerro de Montevideo, *Gibert* 158, March, 1867 (K., seeds hubbled); dry, exposed, gravelly and sandy soil, Cerro, *Herter, Schulz, and Strahl* 650^b, October, 1925 (G., N. Y., F. M., U. C., immature). Dept. San José: sandy ground, Santa Lucia, *Osten* 21691, November 25, 1929 (G., seeds papillose). Dept. Colonia: around

---

author, may be the same as others made by *Kuntze* in Cordoba, which are *S. ramosa* var. *diffusa*.

[1] It is interesting to note that neither *S. villosa* nor *S. ramosa* grow in Peru.

[2] Locality found in Urban in Engler, Bot. Jahrb. xvii. 196 (1893); "2994–3330 ebenda von Encrusilhada nach Caçapana und Rio S. Barbara (Nov. Dec. 1825)."

[3] Cited by Kindberg under *L. trachyspermum*, Mon. Lepig. 31 (1863).

[4] Locality found in Urban l. c.: "d.1504–1853—ebenda vom Rio Pardo über Caçapana nach Bagé (Dec. 1823, Jan. 1824)."

[5] Cited under *Lepigonum arenarium* by Kindb. Mon. Lepig. 17 (1863).

Carmelo, *Cabrera* 3189, December 5, 1934 (La Plata, seeds smooth); high lands, Riachuelo, *Cabrera* 3298, April, 1935 (La Plata, seeds papillose); downs, Riachuelo, *Cabrera* 3903, November 15, 1936 (F. M., rim of seed papillose). Uruguay, locality not found: Rio Santa Lucia, *Kuntze*, November, 1892 (N. Y., seeds papillose, marked *Buda grandis* by Kuntze);[1] Uruguay, *St. Hilaire* (Paris, photo. in G.), probably not the type.[2] Argentina: Prov. Jujuy: Dept. Tumbaya: alt. 2400 m., slopes of mts., Volcan-Cerro, Alta Cordoba, *Venturi* 4900, February 17, 1927 (G., U. S., F. M., Cal. Acad., La Plata, seeds smooth). Prov. Catamarca: Sancho, Dept. Andalgalá, *Jörgensen* 1607, November 15, 1915 (G., U. C., smooth seeds); Quebrada de Yacutula, *Schickendantz* 304, March, 1878 (?) (B., smooth seeds); at the summit of Cuesta Muschaca, *Schickendantz* 264, February, 1876 (B., seeds smooth); Candada, Dept. Andalgalá, *Jörgensen* 1607, February, 1897 (U. S., seeds smooth). Prov. Tucumán: 2600 m. alt., Estancia Las Pavas, Dept. Chicligasta, *Venturi* 9470, March 14, 1924 (U. S., smooth seeds), and 6886, January 16, 1925 (U. S., smooth seeds); Valle de Tafi, *C. Bruch*, 1908 (La Plata; smooth seeds); Sierra de Tucuman, La Ciénaga, *Hieronymus & Lorentz*, January 10–17, 1874 (B., seeds smooth). Prov. Corrientes: Wald vom Riachuelo an Corrientes, *Niederlein*, January 19, 1883 (B., papillose seeds). Prov. Santa Fe: Ceres in Dist. San Cristobal, *Grippel*, October, 1892 (N. Y., papillose seeds; marked *Buda grandis* by Otto Kuntze); around Estancia Leives, Sierra Ventana, *Alboff*, November, 1895 (La Plata, seeds smooth). Prov. Cordoba: Cordoba, *Lorentz*, November, 1877 (K., smooth seeds); Estancia Germania near Cordoba, *Lorentz* 79, June–December, 1874 (B., seeds smooth); Cordoba, *Galander*, November 19, 1880 (B. One sheet has smooth seeds, the other papillose); Cordoba, *Galander*, November 23, 1880 (B., seeds smooth); Cordoba, *Lorentz* 485 (B., only part of the coll., seeds smooth); Cordoba, *Hieronymus*, October, 1877 (B., smooth seeds); Cordoba, *Lorentz* 324^{b}, December, 1870 (B., seeds smooth); Lagunas de Peitiado around Cordoba, *Galander*, February 25, 1881 (B., smooth seeds); Potrero de Laya, Sierra Chica, *Galander*, November 31, 1879 (B., seeds smooth); Estancia La Reduccion, Sierra Chica, *Burkart* 7182, December 26, 1935 (G., seeds smooth); Rio Zeballas, Sierra Chica, *Galander*, January 17, 1878 (B., seeds smooth); *Hieronymus*, Sommer, 1874–75 (B., seeds smooth); Cuesta de Copina, las Envenadas Sierra Achala, *Hieronymus*, January 8, 1876 (B., seeds smooth); Cuesta de Ayel, Sierra Achala, *Hieronymus*, January 12–14, 1876 (B., seeds smooth); San Miguel, Sierra Grande, *Hieronymus*, March 27, 1875 (B., seeds smooth); 1400 m. alt., Copina, Sierra Grande, *Burkart* 7181, December 29, 1935 (G., seeds smooth);

---

[1] Cited under *Buda grandis* by Kuntze, Rev. Gen. iii. pt. ii. 13, Sept. 28 (1898).

[2] Montevideo, the locality given in Fl. Bras. is not on label; the + Cambess. Uruguay on the label is in the handwriting of Spach, and the *S. ramosa* is in secretarial handwriting. Data by courtesy of Mr. C. A. Weatherby.

sands on the banks of the Rio Primavera, Cordoba, *Lorentz* 324^b, 1870 (B., seeds smooth); San Francisco, *Lorentz* 324, February, 1871 (B., 2 sheets, seeds smooth); Prov. Cordoba, no locality, *Lossen* 36, January 25 (G., F. M., B.; only Field Museum coll. mature, seeds smooth); between S. Vicente and the estate of Rueda, Sierra Chica *Kurtz* 6585, December 14, 1889 (La Plata, seeds smooth). PROV. LA RIOJA: between Cueva de la Mesada and Sucrucijada, Sierra Famatina, *Hieronymus & Niederlein* 528, January 31, 1879 (B., seeds smooth); Vallecito, Sierra Famatina, *Hieronymus & Niederlein* 611, January 21, 1879 (B., seeds smooth); Las Tranquitas, Sierra Famatina, *Hieronymus & Niederlein*, February 10, 1879 (B., immature). PROV. SAN JUAN: Cuesta Nueva, *Hosseus* 2540a, February 28, 1927 (B., immature). PROV. SAN LUIS: Cerro Retana, Sierra de San Luis, *Vignati* 294, January, 1934 (La Plata, seeds smooth); Estancia Grande, *Vignati* 68, January, 1934 (La Plata, seeds smooth); Rio de las Barranquitas, *Vignati* 235, January, 1934 (La Plata, immature). PROV. BUENOS AIRES: low, brackish ground about the Rio Paraná, Campana F. C. C. A., *Burkart* 5663, November 5, 1933 (B., seeds smooth); in barren pastures, Campana, *Parodi* 8604, October 27, 1928 (G., B., seeds hubbled or smooth); in barren ground, Campana, *Parodi* 11326, November 21, 1933 (G., seeds smooth); in sandy ground, Isla Mariel, Buenos Aires, *Parodi* 8717, December 10, 1928 (G., papillose seeds); in the hills of Curumalán Pigüe F. C. S., *Burkart* 4836, November 14, 1932 (B., seeds smooth); Cerros on the Pigüe, *Scala*, November 7, 1928 (La Plata, seeds smooth); Cerros and Laguna de Puan, *Scala*, November 10, 1928 (La Plata, seeds smooth); Pergamino, *Parodi* 6635, November 12, 1925 (B., seeds smooth); saline places in the fields, Partido Azul, Estancia Salaberry, *Osten* 205, mid-November, 1886 (B., smooth seeds); Wilde F. C. S., *Burkart* 3929, October 20, 1931 (B., immature); Carhuë, Sierras Pampeanas, *Lorentz* 320^c, April, 1881 (B., seeds smooth); Arroyo Cortapié, Sierras Pampeanas, *Lorentz* 320^b, March 19, 1881 (B., seeds smooth); Sierra Ventana, Sierras Pampeanas, *Lorentz* 320^a, February–April, 1881 (B., seeds smooth); Sierras Pampeanas, *Lorentz* 360, February–April, 1881 (B., seeds smooth); Sierra Ventana, *Alboff* (La Plata, seeds smooth); Bahia Blanca, *Darwin*, early in October, 1832 (K.); Carmen de Patagones, *C. Berg* 33, November 17, 1874 (B., seeds smooth). PROV. RIO NEGRO: vicinity of General Roca (alt. 250–360 m.), *Walter Fischer* 65, December 29, 1914 (G., U. S., N. Y., F. M., seeds smooth); northern bank of Rio Negro, near the island Choele-Choel, *Lorentz*, May 29, 1879 (B., seeds smooth); common between Laguna de Las Bandurrias and Fortin Fé, *Lorentz*, April 24, 1879 (B., seeds smooth); Rio Negro, *Scala* 46 and 48, January, 1916 (La Plata, seeds smooth); Rio Negro, *Wilkes Exped.* 1838–42 (G., U. S., N. Y., seeds smooth). PROV. CHUBUT: seacoast, Port Madrin, *Bettfreund* 52 (B., seeds smooth). PATAGONIA: Quilbay, *Bettfreund* 1249, March, 1893 (B., seeds smooth); Patagonia, *Moreno & Tonini* 343, 1882 (N. Y., marked *Buda media* Dum. (L.) by Kuntze; over-ripe, no seeds).[1] PROV. SANTA CRUZ: Port Desire, *Darwin* (K., seeds smooth); 200 m., Minerales, *Donat* 197, November 14, 1929 (G., Cal. Acad., F. M., U. C., seeds smooth); Cañadon de las Vacas (Sec. xv), *Beoufals* (?) (La Plata, seeds smooth). BOLIVIA: DEPT. COCHABAMBA: 2700 m. alt. Cerritas, *Steinbach* 4007, April 16, 1920 (B., elongate inflorescence showing tendency toward *S. pazensis*, seeds smooth); 2600 m., Cochabamba, *Bro. Julio II* 262, 1932 (U. S., open inflorescence, habit showing tendency toward *S. pazensis*, seeds smooth); 3000 m., Cochabamba, *Kuntze*, March 26, 1892 (N. Y., seeds smooth, protracted inflorescence showing tendency toward *S. pazensis;* marked *Buda grandis* by Otto Kuntze);[2] common on the slopes of the hills, Cochabamba, *Parodi* 10193, February 15, 1932 (G., hubbled seeds, protracted open inflorescence similar to that of *S. pazensis*). DEPT. LARECAJA: 2600–2790 m. alt. near Sorata, *Mandon* 946, 1898 (?) (N. Y., F. M., typical of *S. ramosa*, seeds smooth);[3] 7000 ft., Sorata, *R. S. Williams* 1541, October 2, 1902 (N. Y., seeds papillose on the rim, habit typical of *S. ramosa*). Without locality: *Haenke*[4] (B., marked *Spergularia macrocarpa* Presl[5] and also *Lepigonum marinum* by Kindberg, 1861; seeds smooth and typical of *S. ramosa*).

At first it seems odd that one species should have both smooth and papillose seeds. Further study reveals a few specimens with papillae confined to the swollen rim of the seed, leaving the flat sides smooth, and a few more specimens only slightly hubbled in the same pattern as the papillae of the papillose seeds. The smooth seeds are generally a little larger, 0.7–0.9 mm. long, the majority 0.8 mm., while the papillose ones are 0.6–0.8 mm., the majority between 0.7 and 0.8 mm. But since the shape, color, and wings of both are the same and since both have similar capsules, sepals, leaves, stipules, and geographic range, the papillose-seeded trend deserves no taxonomic recognition. A few specimens in Bolivia have elongate inflorescences and habit similar to *S. pazensis*, which see for discussion.

The only St. Hilaire specimen in the Paris Museum that could be the type of *S. ramosa* has neither the handwriting of Cambessedes, nor the type locality, Montevideo. The plant has longer internodes in the inflorescence and therefore more lax habit than is usual in the

---

[1] Cited under *Buda marina* by Kuntze, Rev. Gen. iii. pt. ii. 13 (1898).

[2] Cited under *Buda grandis* by Kuntze, l. c. (1898).

[3] Cited under *S. villosa* var. *α genuina* Rohrb. in Mart. Fl. Bras. xiv. pt. ii. 268, t. 61, fig. 1 (1872).

[4] Locality given in Presl, Reliq. Haenk. ii. 9 (1831), "Habitat in Peruviae montanis huanoccensibus et in Cordilleris de Chile."—which is probably incorrect because this species is not known from Chile and Haenke *did* go to Buenos Aires and Montevideo where it is common.

[5] Cited as type of *Spergularia macrocarpa* by Presl, Rel. Haenk. ii. 9 (1831).